DOCUMENT RESUME

ED 126 239 CE 006 766

AUTHOR	Castner, David H.
TITLE	An Evaluation Design for School-Based Career Education Programs. Final Report.
INSTITUTION	Wisconsin Univ. - Stout, Menomonie. Center for Vocational, Technical and Adult Education.
SPONS AGENCY	Wisconsin State Board of Vocational, Technical, and Adult Education, Madison.
PUB DATE	Jun 73
NOTE	122p.; Appended material was removed by the author
EDRS PRICE	MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS	*Career Education; Data Analysis; Data Collection; *Educational Assessment; Educational Research; Elementary Secondary Education; Evaluation Criteria; *Evaluation Methods; Evaluation Needs; Information Needs; Information Utilization; *Measurement Techniques; *Program Evaluation; Program Improvement

ABSTRACT

The document presents the final report of a study to develop an evaluation design capable of aiding local agencies in measuring the effectiveness of their school-based, K-12, career education programs. Chapter 1 discusses the problem area examined and includes a summary, objectives, rationale, and limitations of the study as well as a definition of terms. Chapter 2 presents a brief discussion of the methods used in the study. Chapter 3 includes the evaluation design developed and a discussion of the study results in terms of: (1) a definition of evaluation, (2) the integrated evaluation design correlating four stages of evaluation with four stages of program improvement, and (3) tasks and considerations involved in developing and administering the evaluation design. Tasks and considerations discussed are: suggested variables of information needed for the four evaluation stages, suggested methods and instruments useful in data collection, suggested methods for analyzing and treating information, feedback procedures and formats, and criteria for assessing the adequacy of the evaluation design. A reference list of 151 titles is included and 16 figures and 3 tables supplement the text. (LH)

****
* Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original. *
****

ED126239

Final Report

A Sub-Project of the Graduate
Student Research Project

Prepared by:

David H. Castner

Center for Vocational, Technical
and Adult Education

University of Wisconsin-Stout
Menomonie, Wisconsin

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

AN EVALUATION DESIGN FOR SCHOOL-BASED CAREER EDUCATION PROGRAMS

CE 006 766

Final Report

AN EVALUATION DESIGN FOR SCHOOL-BASED CAREER EDUCATION PROGRAMS

Prepared by:

David H. Castner

Center for Vocational, Technical and Adult Education
University of Wisconsin - Stout
Menomonie, Wisconsin

CE006766

April 28, 1975

The research reported herein was performed pursuant to a grant through the University of Wisconsin System. The researcher was encouraged to truly express his professional judgment. Thus, points of view or opinions stated do not necessarily represent official CVTAE or UW-System position or policy.

Table of Contents

Page

List of Figures i

List of Tables ii

Acknowledgements iii

Chapter I: Problem Studied I-1

1. Summary I-1

2. Statement of the Problem I-2

3. Objectives for the Study I-3

4. Rationale for the Study I-4

    4.1 Dissatisfaction with Present Traditional Forms of Educational Systems I-5

        4.11 Existing Problems Now Facing Education I-5

        4.12 Magnitude and Ramifications of Educational Problems ... I-6

    4.2 Possible Causes for Existing Ills I-9

        4.21 Societal Emphasis on College Preparation I-9

        4.22 Education's Emphasis: Preparation for Living vs. Preparation for Making a Living I-13

        4.23 Deficiences in Career Planning and Development I-14

    4.3 Need for Educational Change I-16

    4.4 Defining the Nature and Scope of Career Education--Six Approaches I-18

        4.41 Concise Authoritative Definitions I-20

        4.42 Essential Features and Components I-23

        4.43 Goals, Elements and Outcomes I-25

        4.44 Educational Levels I-26

        4.45 Educational Delivery Systems I-27

        4.46 Philosophical Assumptions and Commitments I-31

            4.461 Premises and Propositions Underlying Career Education I-31

            4.462 Controversy Concerning the Teaching of Values and Work Ethics in School I-34

Page

4.463 Skepticism Concerning the Originality of Career Education ... I-36

4.5 Support for Career Education as a Potential Solution to Educational Ills ... I-36

4.6 Summary and Conclusions ... I-39

4.61 Need for Effective Evaluation of Career Education Programs ... I-39

4.62 Failure of Traditional Methods of Evaluation ... I-41

4.63 Need for Increased Efforts Directed Toward Developing an Evaluation Design for Career Education Programs ... I-41

5. Definition of Terms and Limitations ... I-42

5.1 Limitations of the Study ... I-42

5.2 Definition of Terms ... I-48

Chapter II: Methods Used in the Study ... II- 1

Chapter III: Results ... III- 1

1. Definition of Evaluation ... III- 1

2. The Integrated Evaluation Design ... III- 6

2.1 Four Stages of Program Improvement for Career Education ... III- 6

2.11 Needs Assessment ... III- 7

2.12 Program Development ... III-10

2.13 Program Implementation ... III-11

2.14 Outcomes Assessment ... III-12

2.2 Four Stages of Evaluation for Career Education ... III-13

2.21 Context Evaluation ... III-19

2.22 Input Evaluation ... III-21

2.23 Process Evaluation ... III-21

2.24 Product Evaluation ... III-22

2.3 The Total Evaluation System ... III-22

3. Tasks and Considerations Involved in Developing and Administering the Evaluation Design ... III-26

3.1 Suggested Variables of Information Which May Be Needed for the Four Stages of Evaluation ... III-28

3.11 Needs Assessment Variables ... III-30

Page

3.12 Program Development Variables III-31

3.13 Program Implementation Variables III-32

3.14 Outcomes Assessment Variables III-33

3.2 Suggested Methods and Instruments Which May Be Useful in Collecting Information III-34

3.21 Methods of Collecting Information III-34

3.211 Suggested Research Designs III-34

3.212 Suggested Types of Measurement Devices and Criterion Measures III-37

3.213 Suggested Data Collection Methods and Techniques (Presented and Separated According to Each of the Four Stages of Evaluation for Which They Are Appropriate..................... III-40

3.22 Instruments for Collecting Information................ III-42

3.221 Suggested Commercial Tests Available from Major Test Publishers.......................... III-42

3.222 Suggested Tests Extracted from a Variety of Career Education Handbooks, Guides and Project Reports.............................. III-43

3.3 Suggested Methods Which May be Useful in Analyzing and Treating Information.. III-44

3.4 Suggested Procedures and Formats Which May be Used to Functionally Feedback the Results of Evaluation............. III-45

3.5 Suggested Criteria Which May be Useful in Assessing the Adequacy of Evaluation...................................... III-48

References... IV- 1

Appendix A: Synopsis of Selected Career Education Goals for Schools... A- i

Appendix B: Basic Career Education Elements.................... B- i

Appendix C: Suggested Evaluation Instruments which May be Useful in Collecting Information for School-Based Career Education Programs..Commercial Tests Available from Major Test Publishers.............................. C- i

Appendix D: Suggested Evaluation Instruments which May be Useful in Collecting Information for School-Based Career Education Programs..Tests Extracted from a Variety of Career Education Handbooks, Guides and Project Reports. D- i

Appendix E: Suggested Tasks and Roles of Evaluation Specialists in Career Education.................................... E- i

Page

Appendix F: Table of Contents Based on a Work Breakdown of Evaluation Tasks and Activities...................... F- i

Appendix G: Suggested Research Designs which May be Useful in Collecting Information.............................. G- i

Appendix H: List of Test Publishers and Distributors............. H- i

Appendix I: Sources of Information on Tests, Measurement and Data Analysis.. I- i

Appendix J: Multiple Criterion Measures for Evaluation of School Programs... J- i

Appendix K: Formats that May be Used to Organize and Present the Results of Evaluation.............................. K- i

Appendix L: Definition of Terms Commonly Used in the Fields of Evaluation and Career Education...................... L- i

Appendix M: Extracts from Third Party Evaluation Report, "Articulation of Occupational Orientation, Education and Placement in Private and Public Elementary, Secondary and Post-Secondary Schools.............................. M- i

List of Figures

Page

I Continuum Depicting a Lifetime I-11

II Continuum Describing the Process of Career Education According to Educational Levels. I-28

III Career Selection Pattern I-28

IV Wisconsin Career Development Scope and Sequence Model. I-29

V A Proposed Classification Structure for an Ideal Educational Model. I-44

VI Process of Decision Making . . . . III- 4

VII Basic Decision Alternatives. . . . . III- 5

VIII Career Education's Four Major Stages of Program Improvement. . . III- 6

IX Input-Process-Output Chart . . . . III- 8

X Combined Component Chart for the Four Stages of Program Improvement. . . . . III- 9

XI Cycle of Program Improvement III-17

XII Evaluation Process Chart III-18

XIII Evaluation Process Chart, Input-Process-Output Chart, and the Basic Decision Alternatives Combined III-23

XIV The Total Evaluation System. III-25

XV The EPIC Evaluation Model. III-29

XVI Media Suggestions for Use in Reporting Information III-46

List of Tables

Page

I Ten Action Steps for Implementing Career Education............ I-31

II Stages of Program Improvement for Career Education Interrelated with the Ten Action Steps for Implementation...........III-14

III Ten Substeps Required for Implementation......................III-15

ACKNOWLEDGMENTS

The author of this study would like to express his sincerest appreciation to Dr. Orville Nelson, not only for the many opportunities that were given, but also for the trust, patience, understanding, and assistance that were received in proposing and completing this study. Additional thanks go to Dr. Harold Halfin, Dr. Mehar Arora, and Dr. Carlyle Gilbertson who gave freely of their time during the preparation of this report.

The author is also indebted to the secretarial staff at the Center for Vocational, Technical and Adult Education, University of Wisconsin-Stout. Special thanks are due to Mrs. Judi Henke, Mrs. Ellen Jackelen, Mrs. Paula Owens, and Mrs. Linda Walker.

Finally, the author would like to express thanks and appreciation to his wife, Cheri, for the tolerance and encouragement given throughout the study.

David H. Castner

CHAPTER I

PROBLEM STUDIED

Summary

Current educational literature is filled with statements that are: (1) exposing existing problems that are now facing education, (2) recognizing the importance of improved changes in the field of education, (3) supporting career education as a possible solution, and (4) promising an increase of local, state, and federal emphasis for the approach. Considering that traditional methods of evaluation for innovative educational programs such as career education have in the past failed in their attempts to truly assess program effectiveness (Guba, 1973, pp. 1 and 2), increased efforts need to be directed toward the development of an evaluation system to measure the effectiveness of school-based career education programs.

The major purpose of this study is to develop an evaluation design to measure the effectiveness of school-based career education programs. Objectives of the study include the identification of tasks and considerations involved in developing and administering the evaluation design, e.g., identification of variables, methods and instruments for collecting information, sources of methods to analyze and treat data, and criteria for assessing the effectiveness of the evaluation design.

The initial activities undertaken in the study consisted of an extensive review of available literature pertaining to career education and evaluation. The procedures utilized in developing the evaluation design and in identifying the tasks and considerations involved in administering it consisted primarily of the processes of modification, integration, and synthesis of models and methodologies that were currently being used by evaluation specialists in the field of education. These integrated models and methodologies were composited with special consideration given to their adaptability to the four stages of program improvement for career education that were identified by the researcher. An advisory committee was established early in the study and was utilized throughout its development.

The final results of this study consist of: (1) an explicit definition of evaluation, (2) an integrated evaluation design correlating four stages of evaluation with the four stages of program improvement identified for career education, (3) suggested variables of information which may be needed for the four stages of evaluation, (4) suggested research designs, types of measurement devices and criterion measures, (5) suggested data collection methods and techniques, (6) suggested commercial and noncommercial instruments for collecting information, (7) suggested sources of methods which may be useful in analyzing and treating information, (8) suggested procedures and formats which may be used to functionally feedback the results of evaluation, and (9) suggested criteria for assessing the adequacy of the evaluation design.

The evaluation system is intended for the use of assisting local agencies in evaluating the effectiveness of their school-based career education programs.

Statement of the Problem

The central problems of this study are to: (1) develop an evaluation system to measure the effectiveness of school-based career education programs and (2) report the evaluation system in a functional form that will be useful in assisting local agencies in evaluating the effectiveness of their school-based career education programs.

Objectives for the Study

The following objectives have been identified as the research goals for the study:

1. Identify and define the nature of evaluation.
2. Design an evaluation system for school-based career education programs.
3. Identify tasks and considerations involved in developing and administering the evaluation design.
    - 3.1 Identify and develop variables which may serve as suggestions of information needed in evaluating career education programs.
    - 3.2 Identify methods and instruments which may be useful in collecting data related to the variables of information needed.
    - 3.3 Identify sources and methods which may serve as references and suggestions to analyze and treat data.
    - 3.4 Identify procedures and formats which may serve as suggestions to feedback the results of evaluation in a functional form.
    - 3.5 Identify criteria for assessing the adequacy of the evaluation system.
4. Apply the evaluation system to a selected career education program and report the results.

This report deals with the second major goal of a research project formerly proposed for the Center for Vocational, Technical and Adult Education at the University of Wisconsin-Stout by Dr. Orville Nelson, Co-Director. The two major problems of concern to Dr. Nelson's original proposal were: (1) to determine the status of career education in Wisconsin schools and (2) to develop an evaluation system for career education programs. The first major goal has already been researched and reported by Dr. Mehar Arora, research director, in a separate issue titled "An Assessment of the Status of Career Education in Wisconsin," dated September 30, 1973.

Rationale for the Study

As will be emphasized in greater detail throughout this report, evaluation must be considered as a discipline whose structure and content is highly dependent upon the specific nature of the program which it is to assess. For the present time, however, it should suffice to say that the focus of the evaluation design to be presented in this report is especially geared toward assessing K-12 school-based career education programs.

Before one can fully recognize the need to develop effective evaluation for school-based career education programs, the following major factors should first be acknowledged:

1. There exists nation-wide dissatisfaction with present traditional forms of educational systems.
2. It is feasible to believe that much of that dissatisfaction can be attributed to a lack of educational emphasis in providing course relevancy in terms of self-discovery and career orientation, planning, and development.
3. The nature of the career education approach is to provide course relevancy in terms of self-discovery and career orientation, planning, and development.
4. There already exists nation-wide commitment and support for career education as a potential solution to present educational ills. There also is a promising increase of local, state, and federal emphasis for the approach.
5. Traditional methods of evaluation for innovative programs such as career education have in the past failed in their attempts to truly assess program effectiveness.
6. Career education is an innovative approach which has yet been left unproven.
7. In order to help determine the real utility and promise that career education programs may have to offer, increased effort needs to be directed toward the development of a more effective evaluation design.

The seven major factors listed above provide the basic logic and foundation upon which the remaining portion of the rationale will be presented. For a more detailed outline of the rationale, refer to the one given in the table of contents.

Dissatisfaction with Present Traditional Forms of Educational Systems

"Education has long been given credit for much of the greatness of our nation, and is now increasingly under attack for existing ills," (Korizek, 1971, p. 21). A review of literature reveals that a great deal of dissatisfaction exists on the part of the American society toward the inabilities of present educational systems in meeting the growing needs of large numbers of American youth. Such dissatisfaction seems quite peculiar for a "nation whose economy has produced wealth beyond the imagination of any people in history" (Hoyt et al, 1972, pp. 17 and 18). Educational and social ills have been so frequently remarked upon by authorities that it "is no (longer a) secret that growing numbers have become disenchanted with today's schools" (Meyer, 1972, a, p. 31).

> "Students, parents, teachers, business and civic groups are calling for new ways of applying resources to educational needs . . . in altering obsolete roles . . . within school systems in directions that will facilitate more creative and effective resolution of educational problems" (Holstein, 1971, p. 5).

Existing Problems Now Facing Education. Current educational literature is filled with statements exposing the existing problems that are now facing traditional forms of education. In typical schools across the nation, too many students are "tuning out" because they're being "turned off" by educational curriculums that are "dull and irrelevant" (Meyer, 1972 a, p. 31; Herr, 1972, p. 63; Holstein, 1971, p. 6; Richardson, 1972,

(p. 1), i.e. ". . . too many while still trying to play the game feel lost and lack identity" (Meyer, 1972 a, p. 31). For the student, there seems to exist little or no apparent relationship between what they are asked to learn in the school and its application to the real world that exists outside the walls of the classroom (Holstein, 1971, p. 6; Tyler, 1970, pp. 794-795; Bottoms, et al, 1972, p. 3; Keller, 1972, pp. 2 and 3). The following comments by Bottoms (no date listed, p. 4) express this quite well:

> "For large numbers of American youth, the public school system represents a maze of meaningless activity leading nowhere. They fail to see the relationship between their current school experiences and some identifiable next step. 'What has algebra to do with me?' they ask, 'Why should I try to remember the chief battles of the Revolutionary War?' Even the high school science laboratory appears to be a place for following directions of the laboratory manual to see if they can obtain results reported in the textbook" (Tyler, 1970, pp. 794-795).

The following words by Marland (1972 c, p. 5) seem appropriate at this point: "We fail our young people when we do not at least alert them to the potentialities for the training they have acquired in the academy."

Magnitude and Ramifications of Educational Problems. Findings that illustrate the magnitude and ramifications of the problems just mentioned can also be readily documented. For example, the U. S. Office of Education published a study by Grant (1965, back cover) which indicates that out of every ten pupils in the fifth grade in 1957-58, 9.4 entered the ninth grade in 1961-62; 8.1 entered the eleventh grade in 1963-64; 7.1 graduated from high school in 1965; 3.8 were anticipated to enroll in college in the fall of 1965; 1.9 would have probably earned baccalaureate degrees in 1969. According to these statistics, about 30 percent of all youth in the U. S. fail to leave high school with a diploma. Consequently, they too often enter what Eaddy (1971, p. 3) called "the category of the educationally disadvantaged." The statistics for Grant's study included students with average and above average intelligence. Therefore, one might suspect that the failure to educate 30 percent of all high school students in the U. S. "is not due primarily to the inadequacies of the students, but to the inappropriateness of the program to supply them with the kind of learning required" (Tyler, 1970, pp. 794 and 795).

The speech entitled "Education and Business--A Necessary Merger" given by Sidney P. Marland (1971 b, pp. 20 and 21), U. S. Commissioner of Education, is another source illustrating the magnitude of the dilemma education is now facing. According to Marland, education represents our Nation's largest expenditure, costing $85 billion a year. It even exceeds defense costs by $9 million. With so much money going into education, it would seem appropriate for taxpayers to be able to assume that education is providing almost all young people with career skills that would at least enable them to be economically independent when they decide to leave school.

According to Marland, however, the

> "statistics do not support this assumption. Of 3.7 million young people leaving formal education in 1970-71, nearly 2.5 million lacked skills adequate to enter the labor force at a level commensurate with their academic and intellectual promise. Many left with no marketable skill whatsoever."

Out of these 2.5 million students, 850,000 dropped out of elementary or secondary school, 750,000 graduated from the general high school curriculum, and 850,000 entered college but dropped out without a degree or completion of an organized career program. In considering the costs involved in getting these three groups of students as far up the educational ladder as they got before leaving school, Marland estimated a combined outlay of almost $28 billion which, in essence, represents approximately one-third of the entire funds expended on education during the 1970-71 school year. Thanks to Marland, the nature of education's dilemma is now clearer: "We spend billions to prepare 2.5 million young people for potential disenchantment, aimlessness and failure, year after year, after year!" In light of an appropriation such as this, it is not surprising to find throughout the nation, widespread reluctance on the part of taxpayers to approve educational budgets (Korizek, 1971, p. 21).

Even more distressing, however, are the non-monetary losses--the uncalculated wastes of personal and social investments incurred through the insufficient utilization and development of human resources. The loss of such intangibles as self-identity, self-esteem, prestige, and confidence and the feelings of alienation and non-fulfillment that are accompanied with truancy and misunderstanding are all irretrievable forfeitures that cannot be estimated in terms of money alone. The dismal consequences of educational by-products such as these are, of course, the potential predecessors of such social ills as unemployment, crime, and drug addiction which, in turn, create the need for remedial, correctional, and welfare programs which, in essence, represent an extra burden upon our resources. In other words, the shortcomings of education have created a cycle of a degenerative nature which, in effect, is wasting human potential at the added expense of the taxpayer. "The costs, the blighted lives, the discontent, the violence and the threat of revolution, are needless. Schools can prepare young people to realize their potential" (National Advisory Council on Vocational Education, 1969).

What does the future promise if present trends continue? Unless improvement occurs in our educational system now, the disenchantment and waste that now exists will only perpetuate itself. In 1975, it is expected that the unskilled will account for less than 5 percent of the total labor force; however, the Bureau of Labor Statistics anticipates "that we will still have more than 3.5 million young people with no salable skills trying to squeeze themselves into this sad 5 percent category" (Marland, 1972 a, p. 45). In addition, the National Center for Education (Keller, 1972, pp. 4 and 5) predicts that "by 1980, approximately 15 million more people, most of whom will be young, will want to enter the labor force at a time when 100 million Americans will be seeking work." For these persons. . . "there will be literally no room at the bottom. This tragic situation clearly indicates that America's educational efforts are failing, or at least they are not attuned to the realities of our times" (Marland, 1972 a, p. 45).

Possible Causes for Existing Ills

Societal Emphasis on College Preparation. The heart of the problem underlying education's failing efforts can be found in the "false societal attitude that worships a college degree as the best and surest route to occupational success" (Hoyt, et al, 1972, p. 29). Traditionally, school systems, especially the secondary schools of the nation, have placed primary emphasis on college preparation (Drier, 1972 a, p. 3; Korizek, 1971, p. 21; Jenkins, 1971, p. 8; Keller, 1972, pp. 1 and 2). As Hoyt (et al, 1972, p. 29) and Keller (1972, pp. 1-3) reveal, this traditional emphasis is founded on the principle that the more education a person has, the better off he is. The only problem with education's application of this principle, according to Hoyt and Keller, is that some of its basic limitations and assumptions have been dangerously misconstrued. Some of the distinctions that education has failed to take into full consideration are:

1. The optimum educational preparation required for successful job performance differs from one occupation to another, i.e., not all occupations require a minimum of a college education for a maximum development of successful job performance skills.

2. The optimum educational preparation for successful job performance differs from one person to another within an occupation -- depending upon the particular person's predisposition to success for his chosen occupation.

3. The amount of formal educational preparation required for successful job entry is not in itself valid criteria for judging the worth of an occupation -- such criteria is more properly established within the contexts of both an individual and societal frame of reference, i.e., the value of an occupation is more appropriately ascertained by its contribution to both the indivdual worker and the society that is to be served.

4. Differing degrees of expertise and job satisfaction, ranging from optimum job competency development to development of minimum job entry skills, can be attained in any of the professions and should be fully acknowledged, regardless of whether it required twelve years of formal education as a prerequisite to develop or twenty years.

5. Whatever occupation is suitably selected to keep a person's vocational needs satisfied, these same vocational needs will still be satisfied, regardless of how much formal education was required to prepare him for successful performance within that particular occupation.

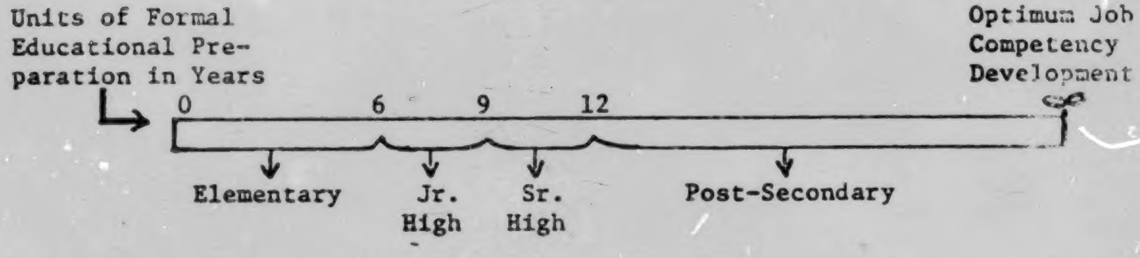
6. Preference of how much educational preparation one chooses depends largely upon the individual's particular perception of work and self-concept which, in turn, has a direct bearing on the unique vocational needs and aspirations which differ widely from person to person.

6.1 Many persons, for reasons of their own, may be willing and completely satisfied to discontinue their formal educational preparation before reaching optimum job competency development, e.g., the point on the continuum (note Figure I) where only minimum job entry skills are developed; while still others may seek more formal education within the same occupation.

6.2 The ultimate degree of job competency development also depends a great deal upon the restriction popularly referred to as reaching one's own "level of incompetence" which is governed by the "Peter Principle" (Peter, 1969).

Continuum Depicting a Lifetime

Figure I


Units of Formal Educational Preparation in Years
0
6
9
12
Optimum Job Competency Development
Elementary
Jr. High
Sr. High
Post-Secondary

7. Not all jobs are easily marketed -- no matter how much formal educational preparation a person has, his chances of finding satisfactory employment within his chosen field are slim if there no longer exists any marketable demand for his occupational services.

The failure to see clearly and account for these seven distinctions points to the roots of the problems that are now facing education. The inappropriate application of the principle regarding education's relationship to work preparation has resulted in a false societal attitude that has over-emphasized a college education and neglected the virtue of its many other alternatives. Such over-emphasis has been carried out to "the extent that those youths who do not pursue it (a college education) are often considered 'second class'" (Hoyt, et al, 1972, p. 30). Keller (1972, p. 3) also agrees with this idea as indicated by the following comments: "These attitudes tend to stigmatize both individuals and programs that have goals related to the world of work, with the exception of those occupations classified as the professions." In addition to this, the

> "inordinate emphasis on college preparatory programs, when combined with parental obsession to see that their children receive a college education, has created a substantial imbalance in the labor force of our Nation" (Jenkins, 1971, p. 8).

Marland (1972 a, p. 45) states that by the time students receive their baccalaureate degree,

> "it may well be a surplus item. We have an excess of such degrees now in the aerospace industry and in certain parts of the teaching profession, and the National Planning Association predicts an eventual excess of bachelor's degrees in every field except the health professions. The Department of Labor indicates that in the near future, 80 percent of all jobs will be within the range of the high school diploma."

Yet as Bottoms (et al, 1972, p. 3) observed, "at the secondary level, over 80 percent of students are enrolled in either the college preparatory or general education curriculum designed to ready them for college attendance." The implications for our present forms of educational systems are clear: "When over 80 percent of the students are getting ready to do what over 80 percent will not, in fact, actually do, something is surely wrong with American education" (Bottoms, et al, 1972, p. 3). There seems to be no doubt in Hoyt's (et al, 1972, p. 30) mind where much of the responsibility rests for the societal attitude which over-emphasizes college preparation:

> "The American system of formal education has, in its basic structure, philosophy, and methodology, been a major contributor to this societal attitude and must accept a major share of the blame for the unfavorable personal and social impacts. If American education can and will change, it can become a major contributor toward the goal of eradicating this attitude in our society."

As Hoyt (et al, 1972, p. 30) points out, changes such as these, that are directed toward educational systems, are not intended to lower the values of a college education for those persons who have selected a college program as a pertinent goal in their life; as Jenkins (1971, p. 8) asserts, "there will always be societal demands for college graduates." For such persons as these, however, it is necessary that they look upon their college education as contributing to some relevant and personal goal. In addition, it is not the intention of such charges to imply that the only objective of formal education is job preparation alone. Rather, it "is a plea for acceptance of a greater variety in life styles and in types of career preparation." It also represents the belief that formal education would have more meaning if it were not completely considered an end in itself, i.e., something that, for some vague reason, has to be done and finished as soon as possible.

Education's Emphasis: Preparation for Living vs. Preparation for Making a Living. According to Hoyt (et al, 1972, p. 30) and Bottoms (et al, 1972, pp. 2 and 3), the two basic purposes of education have historically and philosophically been: (1) preparing people for living and (2) preparing people for making a living. They also assert that education has been primarily emphasizing preparation for living rather than preparation for making a living. This emphasis could very possibly be the inherent consequence of education's response to the societal attitude earlier mentioned (Keller, 1972, pp. 1-3). As Hoyt (1972, p. 35) states, "The schools have done quite well what we have told them to do. .," it's just that "we have not insisted they do a number of things which are important to society." In the process of placing major emphasis on preparation for living, education can, in effect, become an end in itself. Hoyt and Bottoms both have stated similarly that "in practice, education's prime purpose has seemed to be education," as though it were the sole purpose of the typical classroom teacher to prepare his students for ascending to the next grade level in order that even bigger doses of education could be administered. Hoyt appropriately referred to this emphasis in American education as "school for schooling's sake." Goldhammer and Taylor, (1972, p. 21) expressed it this way: "The schools are steeped in the academic traditions which emphasize scholarship, not effectiveness, in performing one's roles." According to their interpretation, traditional curriculum "relates to the structure of knowledge, not to the life needs of students."

Deficiencies in Career Planning and Development. Due to technological progress and its accompanying specialization, there have evolved more educational and occupational opportunities than have ever existed before. Consequently, there now exists "unprecedented pressures. . . for individuals to define who they are and what goals they value" (Drier, 1972 a, p. 3). Hoyt (1972, p. 182) seems to agree with this, as the following comments clearly indicate: "The needs of this society, both youth's and adult's, in these times for individualized and continuing assistance in career preparation and development are great and are becoming greater." In addition to the understanding that students need to define themselves and their goals in terms of available career opportunities, studies show that there exists a very high level of student interest in the areas of choice-making and career development from the very early ages throughout the life-process of maturity (Sloccum and Bowles, 1967; Campbell, 1968).

Despite this need for student career development activities and a high level of student interest in these areas, there exists evidence within these same studies that also indicates that students are not getting the educational assistance they need in order to develop the career planning skills and the personal and social clarifications that are essential for career development. Similar studies by Shill (1968 a, 1968 b, 1968 c) and Boykin (1968), not only support this idea but further suggest that students get more career information outside the school setting than from within. In addition, McMinn (1971, p. 11) asserts that, "Traditional curriculums have not assisted individuals to perceive work as having personal relevance, as being critical to one's determining his own life style, or as being a means that contributes to self-fulfillment." Consequently, many youth are not only isolating themselves from any meaningful participation in the academics of school because of boredom (as earlier depicted in the section of the rationale titled "Existing Problems Now Facing Education"), but they are also finding themselves unable to take advantage of the vast amount of information about career opportunities that are now available (Drier, 1972 a, p. 3; McMinn, 1971, p. 12; Holstein, 1971, p. 6). Such students as these find themselves becoming that portion of our educational system which is not "prepared to meet the challenges which will face them once they leave the protective walls of the school" (Jenkins, 1971, p. 8). They are the students who will eventually "tune out" because of being "turned off" by curriculums which they find to be "dull and irrelevant." The sum total of such educational outcomes will eventually be evidenced in the increasing number of students who will someday drop out or graduate from formal education without having acquired any salable skill to meet growing needs of the job market or without having organized any plans for further training (Meyer, 1972 a, p. 31; Holstein, 1971, p. 6; Richardson, 1972, p. 1; Korizek, 1971, p. 21; Goldhammer and Taylor, 1972, p. 3). Unfortunately, these are the students who will ultimately account for the Nation's ever increasing unemployment, welfare, and crime rates that were alluded to earlier. Rhodes (1969, p. 8) offers some conclusive remarks that seem to summarize much of what has been presented thus far:

> "Annually, our educational system turns out millions of unskilled and untrained graduates and dropouts into a work force that has no place for them. For most of our youth, the secondary school is their last chance for full-time education; consequently, their preparation for a job must come during high school. Education must be made relevant, with deep concern from the total student body; it must prepare each youth to graduate with a diploma in one hand and a job in the other. The alternative is clear, we either provide him with a job or fight him in the street."

What are the possible causes for existing educational and social ills? Hoyt (et al, 1972, pp. 182 and 183) offers the following conclusive remarks: In addition to an over-emphasis on college preparation, "Much of the current societal unrest exists because of a lack of emphasis on career education for all. . . It is time that career education needs of all our citizens be recognized and provided for."

Need for Educational Change

"Somehow, and in some way, school must be made to make sense to students. . ." (Bottoms, 1972, p. 3). The logical change that is needed, according to Hoyt (et al, 1972, p. 30) and Bottoms (et al, 1972, p. 3), is that the insufficient emphasis on the educational goal of preparing for making a living be restored by re-integrating the objective of successful preparation for work into curriculums.

Hoyt (et al, 1972, pp. 3 and 7) maintains that up to the present, ". . . our schools have seemed to operate as though only vocational education personnel are charged with responsibility for helping students ready themselves for employment. This of course, is patently ridiculous. . ." He further asserts that teachers can make all types of curriculum relevant to student vocational interest:

> "In these times of increasingly rapid social and technological change, there is no more basically important way of helping students become ready to work than through the sound acquisition of the basic skills of reading, mathematics, communication, the social sciences, and the natural sciences. . . Career implications are in every learning experience, from pre-school to graduate school and beyond."

As earlier implied, in order to be congruent to the diverse needs of all students, curriculum content will have to be pertinent to all varieties of life styles and levels of career preparation that exist. This is not suggesting that the educational goal of preparation for making a living replace the goal of preparation for living. Rather, it is a conviction that equilibrium among the two purposes of education should and can be restored as a viable solution for coping with the educational and social ills that now exist.

As many sources will verify, not all problems that confront society are solely caused by education, nor can they be completely overcome by the school systems alone; by the same token, however, there seems to be widespread agreement that education can be a much more strategic force than it has been in implementing possible solutions (NAM, 1971, p. 12;

Richardson, 1972, p. 1; Hoyt, et al, 1972, pp. 18 and 26; Peterson, et al, 1971, p. 3; Goldhammer and Taylor, 1972, p. 4).

> "The 50,000,000 American families for whom work is necessary, but college inappropriate, demand alternatives that will offer them status, security, satisfaction, and success. They should not wait much longer" (Hoyt, et al, 1972, p. 29).

In hearty response to the societal demands for increased responsibility in contributing a greater share of educational improvements for these 50,000,000 American families, much of education's attempts have been nationally exerted in the direction of a popular new curriculum emphasis called, "career education."

Defining the Nature and Scope of Career Education - Six Approaches

Earlier in the introductory paragraph of the rationale, it was mentioned that the orientation of an evaluation design is highly dependent upon the particular type of program being assessed. This suggests that in order for an evaluation design to be effective, it must be custom tailored with close consideration given to the particular nature of the program it is to assess. Therefore, before proposing any evaluation design, it would first seem essential that the specific nature and scope of career education be defined rather explicitly.

Ever since Commissioner Sidney P. Marland introduced the emphasis of career education as a major goal of the U. S. Office of Education, there has been deliberate refusal on his part to explicitly define, in specific terms, exactly what he had meant by the term "career education" (Bottoms, et al, 1972, p. 5). "In fact, the strategy is to leave the matter of definition open to as much dialogue and interaction as possible" (Goldhammer and Taylor, 1972, pp. 5 and 6). The assumption of this strategy pre-supposes that leaving the specifics of the definition open to interpretation will inevitably bring rise to healthy controversy and debate which, in turn, will lead to creative development of the concept by educational leaders. Consequently, "the most accurate and honest statement to be made at this time is that career education remains to be precisely defined" (Goldhammer and Taylor, 1972, p. 5). The general consensus for many authorities then, follows that not only will the task of operationally defining the term career education remain a difficult venture, but also that the career education concept itself will continue to exist as a movement guided by a non-universally accepted definition for quite sometime to come (Miller, 1972 a, p. 16; Hoyt, et al, 1972, p. 1; Bottoms, et al, 1972, p. 5; Goldhammer and Taylor, 1972, p. 5).

Swanson (1972 a, p. 3) sums it up this way:

> "Career education is almost impossible to define and its implementation is subject to many interpretations and numerous compromises. It has been subjected to endless combinations of pressures and preferences to reflect the alternative views of its advocates and its sideline observers."

As an added insight to the present non-universal definitional state of career education, Bottoms (et al, 1972, p. 5) adds, in a somewhat humorous vein, the following "words of wisdom": "After all, why should 'career education' be different from any other educational concept?"

In an attempt to arrive at the specific nature and scope of career education, and yet account for the variations of interpretation and emphasis that exist among different definers and implementers of the concept, the researcher has elected to take the advice of Swanson (1972 a, p. 111) who states that,"No single approach to the description or definition of career education is complete or adequate." What he feels is needed in order to properly define career education is a number of approaches which are "mutually reinforcing." As a result, I have selected to use the types of approaches that were suggested by Swanson (1972 a, pp. 109-111) and added one of my own (i.e., the concise authoritative definitions approach) in hopes that a valid and yet currently representative description of career education could be attained. It should, perhaps, be emphasized at this point that these approaches are not mutually exclusive, i.e., some overlap inevitably exists, however, as Swanson earlier preferred, these approaches will have the end effect of being mutually reinforcing in the direction of a specific description of career education. The approaches will be presented in the following order: (1) concise authoritative definitions, (2) essential features and components, (3) goals, elements, and outcomes, (4) educational levels, (5) educational delivery systems, and (6) philosophical assumptions and commitments.

Concise Authoritative Definitions. The concise authoritative definitions approach is an effort to define the nature and scope of career education by offering examples of definitions by authorities who have attempted to conveniently define career education in one or two tidy and concise paragraphs. Six examples of such attempts were selected in order to illustrate and account for the fact that for every definer of career education, there exists a somewhat differing definition for it, e.g., Hoyt's definition emphasizes the career aspect of career education while Evan's definition of the same concept emphasizes the educational aspect of the approach (Hoyt, et al, 1972, p. 1). The six selected examples are as follows:

1. To Hoyt, "career education is defined as the total effort of public education and the community aimed at helping all individuals to become familiar with the values of a work-oriented society, to integrate these values into their lives in such a way that work becomes possible, meaningful, and satisfying to each individual" (Hoyt, et al, 1972, p. 1).

2. To Evans, "career education is the total effort of the community to develop a personally satisfying succession of opportunities for service through work, paid or unpaid, extending throughout life" (Hoyt, et al, 1972, p. 1).

3. To Meyer (career education coordinator, Wisconsin DPI; 1972 b, mimeographed handout), "Career education is a program to facilitate the lifelong process of career development. It is a motivational approach to education for people of all ages, at all grade levels, and in all subject areas. It is designed to maximize career development by providing guidance and counseling services, by providing experiences to increase self-awareness, by relating learning to occupation, by utilizing community resources, by blending academic and vocational education, by providing exploratory work experience, and by preparing for and placing them in an appropriate 'next step' in their career development, each time they exit from formal education."

4. To Marland (U.S. Commissioner of Education; 1971 e, interview), ". . . the term 'career education'. . . is basically a point of view, a concept - a concept that says three things: First, that career education will be part of the curriculums for all students, not just some. Second, that it will continue throughout a youngster's stay in school, from first grade through senior high and beyond, if he so selects. And third, that every student leaving school will possess the skills necessary to give him a start in making a livelihood for himself and his family, even if he leaves before completing high school."

5. To Pierce (Deputy Commissioner for Occupational and Adult Education, U.S.O.E. 1973, p. 51), "Career education is . . . an attitude, an educational philosophy, if you will, that must, to be totally effective, permeate the thinking of every teacher, counselor, administrator, board member, and parent of this country.

   It is simply a commitment to do everything possible, beginning with pre-school programs, and continuing through graduate school to see to it that the educational system prepares all children, youth, and adults, who do not suffer from an insurmountable physical, mental or emotional impairment, to

> function at the maximum of their ability when they enter the labor market. . . . Career education, therefore, pervades all of education, and everything we do is done, not for the sake of education, but for the sake of the student's career preparation."

6. To Goldhammer and Taylor (1972, p. 6), "Career education considers curriculum to be systematic - an integrated and cumulative series of experiences designed to help each student achieve: (1) increased power to make relevant decisions about his life, and (2) increased skill in the performance of his life roles.

   Specifically, career education is designed to capacitate individuals for their several life roles: economic, community, home, avocational, religious and aesthetic. It recognizes the centrality of careers in shaping our lives by determining or limiting where we work, where we live, our associates, and other dimensions that are significant in defining our life style. Designed for all students, career education should be viewed as lifelong and pervasive, permeating the entire school program and even extending beyond it."

In utilizing an eclectic approach, the researcher has developed a concise integrated definition of the nature and scope of career education. This definition reflects selected bits and pieces of the definitions just mentioned. Like other definitions of career education, this one is also subject to the personal interpretive reasoning of its author and is, by no means, offered as a universally accepted definition.

Career education is the lifelong pervasive process which systematically and sequentially provides, through the total combined efforts and resources of the system of public education, the community, and the individual student, the following:

1. A cumulative and dynamic series of experiences offering flexible insight into the current nature and complexities of our work-oriented society (e.g., its values, needs, opportunities, problems and promise) for those persons who must function within that society.

2. A succession of opportunities to relate learning to all the variety of educational opportunities, career options and

consequent life styles that are available - a blending of the academic and theoretical world of the classroom with exposure to the realities of the world of work.

3. Educational assistance required for developing the career planning and decision-making skills and the personal clarifications (obtained through self-awareness) that are essential for defining and determining life styles.

It is the ultimate purpose of career education to provide these opportunities in a functional way that will facilitate all individuals, of all ages, to identify, develop, and perform personally relevant life roles (e.g., home, community, religious, work, financial) in the capacity _they_ choose to define such roles. Through objective acknowledgement and acceptance of a greater variety of life styles and alternatives for career preparation, the process of career education is designed to enable a greater variety of people to live a more meaningful and satisfying life within the positive contexts of both an individual and societal frame of reference.

Essential Features and Components. This second approach helps to provide some specifics for the generalities that were offered in the concise authoritative definitions approach. The following list represents an integrated composite of features and components that are considered by a variety of authorities to be essential in the proper functioning of career education programs (Swanson, 1972 b, pp. 4 and 5 and 1972 a, p. 110; Miller, 1972 b, speech; Hoyt, et al, 1972, pp. 5-10; Keller, 1972, pp. 3 and 12; McIntyre, 1972, pp. 1-4; Goldhammer and Taylor, 1972, pp. 5 and 6; Richardson, 1972, pp. 3-7; Arizona State Advisory Board for Vocational Education, 1972, p. 12):

1. Career education is for all individuals of all ages; it is not an exclusive approach just for non-college bound youth.

2. Career education is an integral part of the total school curriculum sequentially involving all grade levels and all course subjects beginning in early childhood and continuing throughout life; it is not a discreet entity to be added to present curriculum as a separate independent block, nor can it be obtained merely through the establishment of a single area vocational center.

3. Career education requires utilization of the resources, as well as the active cooperation and participation of all school and community members - including the student; career education unites students, parents, schools, and community enterprises in a common cause.

4. Career education utilizes the motivating force of career interest in relating the importance and contribution of instructional curriculum to the real life career implications of the world of work.

5. Career education exposes individuals to the wide range of educational and occupational opportunities that are available and orients them to the nature of the society in which they must someday function in some chosen capacity; familiarity with the world of work creates insight into the work attitudes, opportunities, promise, and problems that are a reality in our society.

6. Career education focuses on the development of rational decision-making skills in order that individuals may choose wisely among the various educational and vocational options that are available to them.

7. Career education facilitates the development of self-awareness and clarifies the relationship between different types of work and their resulting life styles; this assumes that greater self-understanding will lead to the satisfactory selection of an individually desired style of life and the identification of an appropriate career which compliments that life style.

8. Career education does not force or limit students at an early age to make particular decisions pertaining to the selection of a specific vocation or life style; career education is a sequential process that encourages and enables students to explore alternative careers and life styles upon which tentative decisions can be made and modified; career education acknowledges the fact that career development is a life-long process and may involve several successive occupational choices.

9. Career education enriches traditional school disciplines by extending beyond the sterile boundaries of the classroom into the realistic realms of the world of work; career education

permits individuals to exit school and utilize the home and the community environments as sources for observation, work study, and work experience in selected occupations; after such experiences, the individual may elect to return to school for further formal education (assuming the person's freedom to return to formal school education is governed within the limitations of compulsory education).

10. Career education provides vocational skill competency development up to at least job entry levels in selected occupations that are flexible with the changing needs of a work-oriented society; these minimum skills are considered necessary prior to any lengthy or final exit from formal education in order to permit a successful transition from school to work.

11. Career education features 100 percent placement, whether the student is placed in a full-time career of his choice, or is just temporarily placed in an educational or training program which is preparatory in nature; student follow-up with successive placements and re-education, if desired, provides a source for career education's accountability.

12. Career education is neither "anti-college" nor "pro-trade skills;" it provides equal emphasis and acceptance for all dimensions of the "occupational hierarchy" including the various modes of career preparation and the differing life styles which accommodate them; such objectivity fully provides the security and protection of individual freedom of choice.

13. Career education is not synonymous with the term vocational or technical education, however, vocational education is an essential component of career education; by the same token, career education is not in itself occupational training, even though occupational training is a necessary ingredient of career education.

14. Career education in no way conflicts with other educational objectives; it is rather an approach to restore equilibrium among the polar objectives of education: preparation for living vs. preparation for making a living.

Goals, Elements and Outcomes. This third approach describes career education in terms of desired pre-determined performance outcomes and characteristics that individuals should cumulatively acquire after exposure to program treatment. Through detailed examination of a variety of career education handbooks, guides and instructional units, Keller (1972, pp. 16-27) has developed a synopsis of selected career education goals for schools. This synopsis may be referred to in Appendix A of this report.

The Arizona State Advisory Board for Vocational Education (1972, p. 10) summarizes the goals of career education into the following three general goals:

> Learning to Live: This means developing a self-awareness of one's capabilities and developing the ability to deal with leisure time and society in general.
>
> Learning to Learn: This involves motivating students so that they want to learn the basic educational subjects. This can be done by making the subjects meaningful and by relating them to the real world of work.
>
> Learning to Make a Living: This means preparing students so that they have the capability to support themselves economically and to become productive members of the community.

After acknowledging the fact that "there may be many sets of elements which identify or describe career education," the staff at Ohio State's Center for Vocational and Technical Education have identified eight elements along with eight respective desired outcomes for use in their Comprehensive Career Education Model (CCEM) project (Miller, 1972 a, pp. 20-23). These elements and outcomes may be referred to in Appendix B of this report.

Educational Levels. The fourth approach to defining career education focuses on the sequential and cumulative process of implementing career education along educational levels, starting with early childhood and proceeding through adult and continuing education. Each level of this cumulative process has specific objectives that are geared toward the level of comprehension that can be expected of the individuals for their respective grade level. In reviewing a variety of proposed models which utilized educational levels in defining school-based career education, it was discovered that a number of features seemed to be common to them all. Figure II (p. I-28) illustrates these common features in a single chart which is based on an integration of the features and key terms of several models (Keller, 1972, pp. 9-13; Holstein, 1971, p. 6; Arizona State Advisory Board for Vocational Education, 1972, p. 11; McIntyre, 1972, p. 2; Richardson, 1972, p. 5; Bailey, 1971, pp. 15-27). The format for the chart is patterned after Figure I (Continuum Depicting a Lifetime, p. I-11) which was developed earlier in the rationale.

In order to give an example of some of the sequential and cumulative processes that occur along the various educational levels of the continuum illustrated in Figure II (p. I-28), a chart depicting a "career selection pattern" developed by Goldhammer and Taylor (1972, p. 139) is presented in Figure III (p. I-28).

The Wisconsin Career Development Scope and Sequence Model (Drier, 1972 b, p. 13) along with its career development concepts, as shown in Figure IV (p. I-29), is another useful example which illustrates the educational levels approach. This state guide depicts, not only the sequential order in which the various career development concepts could be implemented, but also indicates the relative emphasis that each of the concepts might be stressed.

Educational Delivery Systems. The delivery systems approach to defining career education focuses in differing amounts (depending on the differing peculiarities of various programs), upon the resources that are available to the educative function (including such things as student time and effort,

Figure II

Continuum Describing the Process of
Career Education According to Educational Levels

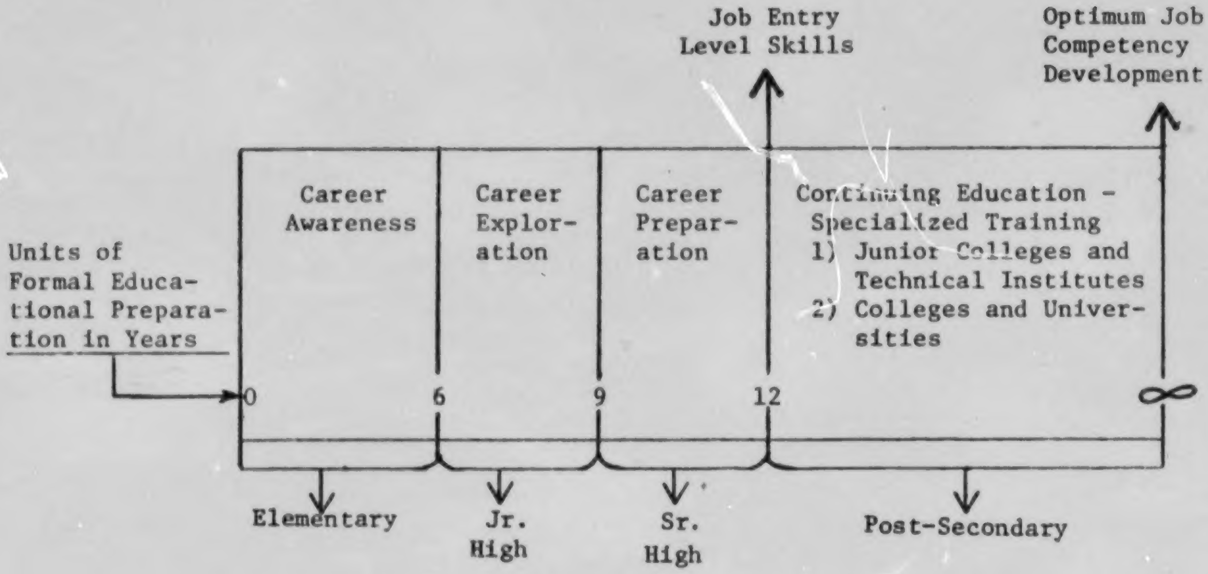

Job Entry Level Skills
Optimum Job Competency Development
Units of Formal Educational Preparation in Years
Career Awareness
Career Exploration
Career Preparation
Continuing Education - Specialized Training
1) Junior Colleges and Technical Institutes
2) Colleges and Universities
0
6
9
12
∞
Elementary
Jr. High
Sr. High
Post-Secondary

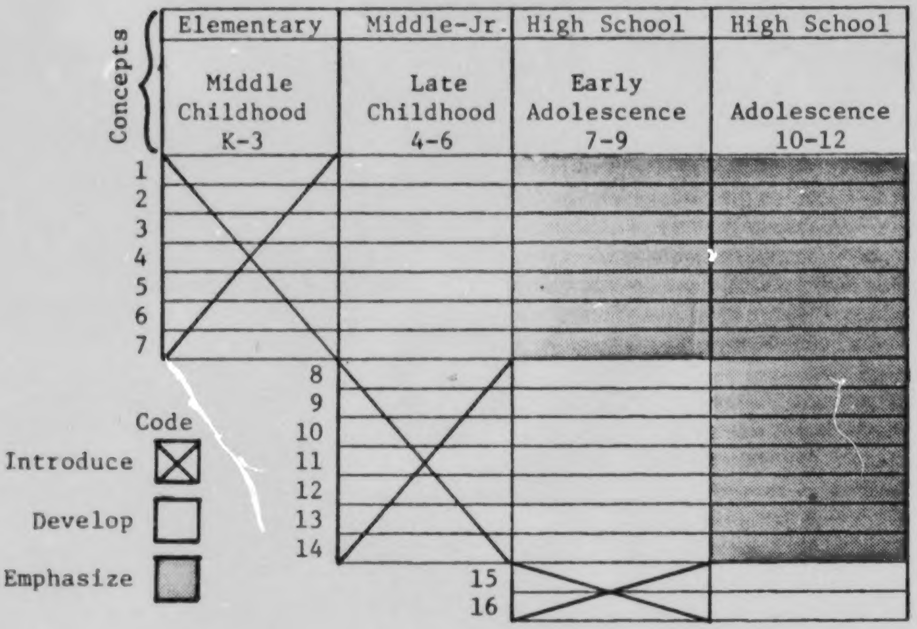
Figure III

Career Selection Pattern

Elementary	Middle Grades & Jr. High	Senior High	Post High
Exploration of what the world and the society in which one lives has to offer – Learning basic skills and what individuals do to become workers in various fields	Exploration of various career possibilities consistent with the potentialities of the individual child – actual involvement in activities performed in certain careers and learning some basic skills needed for success in these areas. Studying the styles of life and conditions under which people engaged in various careers live and work.	Narrowing the choice of a career to a few limited possibilities. Studying background knowledge and acquiring background and fundamental skills. Narrowing field of choice to increasingly fewer options. Learning more about self and training requirements for selected career areas.	Basic occupational or skilled or professional preparations

Figure IV

Wisconsin Career Development Scope
and Sequence Model


Concepts
Elementary
Middle Childhood K-3
Middle-Jr.
Late Childhood 4-6
High School
Early Adolescence 7-9
High School
Adolescence 10-12
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Code
Introduce
Develop
Emphasize

Career Development Concepts

1. An understanding and acceptance of self is important throughout life.
2. Persons need to be recognized as having dignity and worth.
3. Occupations exist for a purpose.
4. There is a wide variety of careers which may be classified in several ways.
5. Work means different things to different people.
6. Education and work are interrelated.
7. Individuals differ in their interests, abilities, attitudes and values.
8. Occupational supply and demand has an impact on career planning.
9. Job specialization creates interdependency.
10. Environment and individual potential interact to influence career development.
11. Occupations and life styles are interrelated.
12. Individuals can learn to perform adequately in a variety of occupations.
13. Career development requires a continuous and sequential series of choices.
14. Various groups and institutions influence the nature and structure of work.
15. Individuals are responsible for their career planning.
16. Job characteristics and individuals must be flexible in a changing society.

faculty time and effort, curriculum, materials and equipment, and space). It also specifies how these resources might be implemented in the direction of program goals. As Swanson (1972 a, p. 110) states: "The delivery system for career education is the motion element of the program as viewed in its day-to-day operation."

The CCEM staff at Ohio State (Miller, 1972 a, pp. 25 and 26) have developed "both a standardized format and guidelines for curriculum unit revision or development" for use in designing delivery systems for their career education project. The guidelines and format are as follows:

1. A teacher's guide which specifies:
    A. The rationale for the unit.
    B. Intended use of the unit by suggested grade level, subject area(s), time, grouping, and special considerations.
    C. Goals and performance objectives.
2. Teaching procedures:
    A. Learning activities.
    B. Resources.
    C. Performance evaluation.
3. Teaching materials.
4. Evaluation procedures.
5. Specifications for in-service training of the teacher or implementing the unit.

Another example which illustrates how resources might be implemented into action is offered by Hoyt (et al, 1972, p. 150). His delivery system which includes ten action steps for implementing career education are shown in Table I as follows:

Table I

Ten Action Steps for Implementing Career Education

Phase I

1. Organize the appropriate interactive network of interested individuals and groups.
2. Gain an understanding of the concepts of career education and establish appropriate educational objectives.

Phase II

3. Study the current educational system to determine the changes necessary to turn it into a true career education system.
4. Inventory and marshal all available resources.
5. Begin planning the career education system most appropriate for your community.

Phase III

6. Seek the cooperation of all necessary organizations, institutions, and individuals.
7. Implement the system (note p. III-15).
8. Put the evaluative process in operation to determine how well the system is working.

Phase IV

9. Create a feedback system to use evaluation findings to adapt and improve career education programs.
10. Make provision for a program of maintenance to sustain the vital parts of the system and the initiative, and tie these activities into the interactive network.

Philosophical Assumptions and Commitments

Premises and Propositions Underlying Career Education. In order to better understand the total nature and scope of career education, the philosophical assumptions and commitments from which it has emerged must be considered. Most conceptual definitions of career education are actually a product of a work-oriented society and, therefore, represents some pretty strong convictions pertaining to the ethical nature of people, society, and economics. The one basic premise which seems to underlie the whole concept of career education, as stated by Hoyt (et al, 1972, p. 1 and 2), is:

> "that the society is and should be achievement-oriented, with the development of the individual as its primary objective, but with the development best accomplished and measured through service to others and to the whole. That conviction allows for, and, in fact, demands, that man be viewed as more than a working machine -- that he is what he believes, what he treasures. But above all, it concludes that the best measure of what he is, is what he achieves in the development of his talents and in his service to himself and to his fellow man.
>
> That conviction gives primacy to the employment role because the average adult male spends more time in pursuit of his working career than any other single activity. . ."

In elaboration of this basic premise, Hoyt was careful in emphasizing that "achievement is not limited to the labor market," but rather extends into all sectors of an individual's life, including his personal leisure time; "Therefore, career education is preparation of all meaningful and productive activity. . ."

The following four propositions by Hoyt (et al, 1972, pp. 66 and 67) are offered at this point in order to provide an idea of some of the assumptions upon which definitions of career education seem commonly based:

1. Given equal natural resources and ingenuity among its people, the expected productivity per unit of population associated with any society bears a direct relationship to that nation's commitment to the work ethic.
2. The classical version of the Protestant work ethic in American society is currently being eroded by a variety of forces and is no longer a viable concept for many members of our society.
3. No great civilization in history has continued to prosper after it abandoned its basic commitment to a work ethic (as Bottoms, et al, 1972, p. 2, explains within the same context: "This was true of such nations as Persia, Egypt, Greece, Rome,

Spain, Portugal, France and England"). There is no reason to believe the United States is exempt from the historical pattern.

4. The basic goal of career education is the restoration of various forms of the work ethic adapted to reflect new social and economic realities as a strong and viable force throughout our society.

To further clarify just exactly what might be referred to as the "classical work ethics," Hoyt (et al, 1972, p. 67) provides the following examples:

1. All honest work possesses innate dignity and worth.
2. Excellence can be attained and is rewarded in any occupation.
3. One should strive to do his best in whatever work he does.
4. The worker who is satisfied with doing less than his best is, to some extent, dissatisfied with himself.
5. The contributions one can make to society stem, to a large extent, from the work one does.
6. Work is seen as possessing personal, as well as financial rewards for the worker and the phrase, "A task well done is its own reward" has real meaning.
7. Persons to whom the work ethic is meaningful want to work, prepare themselves for work and actively seek to work; they are, most of the time happier when they are working than when they are not.
8. A significant portion of the pride individuals have in themselves is found through accomplishment of their work.
9. Hard work is seen as the best and surest route to the highest level of occupational success possible for the individual.

The various concepts pertaining to the classical work ethic are applicable to some individuls while others strongly oppose them (Hoyt, et al, 1972, p. 69). There seems to be a new breed of worker entering the labor market that does not completely agree on all the aspects of the classical work ethics, e.g., this new breed of worker appears to be less satisfied by pay and more interested in the meaningfulness of work

(Hoyt, et al, 1972, pp. 23, 24 and 40; Keller, 1972, p. 5). Our educational system needs to account for the variety of differing amounts of acceptance that now exists among different persons for the conceptual assumptions of the classical work ethics. Career education is dedicated to this cause in its efforts to help individuals acquire a truly personal meaning of work that is uniquely valid for them.

> "Where the work ethic can be used as a basis for such meaning, it should be fully utilized. Where the work ethic, in its classic form, cannot be applied, then alternative ways of bringing meaning to work must be developed and used" (Hoyt, et al, 1972, p. 69).

Controversy Concerning the Teaching of Values and Work Ethics in School. This brings the rationale to the issue which presently appears to be the most controversial aspect of the career education concept -- teaching values in public education with the major source of criticism being the consideration of the work ethic and the emphasis it places on the quality of work and the "good" worker characteristics (Hoyt, et al, 1972, p. 39). One example which seems to illustrate this controversial aspect of career education quite well was written in a recent article of the Phi Delta Kappan by Nash and Agne (1973, pp. 372-377). In this article, they made an analysis of the ideological premises underlying career education proposals and indicated that there are many positive and humane aspects of career education while at the same time "a number of key assumptions have been left unexamined," e.g., according to them, such assumptions as human behavior is achievement-motivated and the continued existence of a corporate social order which values the classical work ethics as being "good" have been left unchallenged. In general, this group felt that "because of the excessive claims and the absence of significant self-criticism, we believe that the career education prospectives must undergo careful, constructive examination."

Perhaps in some cases the perspectives of career education have been left unexamined. By the same token, however, much thought has been invested toward consideration of what might happen if the eroding work ethic were left unattended to. For example, authorities (Bottoms, et al, 1972, p. 2; Keller, 1972, p. 5; Goldhammer, 1972, p. 4) have pointed out that the erosion of the work ethic over the last thirty years has now come to the point where the United State's position of leadership in the world has been jeopardized. As Bottoms (et al, 1972, p. 2) asserts:

> "The relative loss of the work ethic in our country, coupled with the relative gain of the work ethic in such countries as Russia and the Peoples Republic of China, is seen, by many people, as a basic reason why such countries appear to be catching up with the United States as leading world powers. It is a very serious thing indeed."

The goals of education, whatever they may be, are a product of the society from which they evolved. Therefore, they tend to reflect very closely the values and influences of the prevailing cultural and economic factors of that society. The concept of work, along with the prevailing values and ethics which accommodate it, are a reality of our society; the average adult male spends most of his waking hours in an activity called "work." ". . . if work is a reality of our society, then should it not be an integral part of our total educational system?" (Keller, 1972, p. 1).

Skepticism Concerning the Originality of Career Education. Due to growing skepticism concerning sloganizing, career education has been known to be attacked by critics who question its originality. Actually, "career education concepts are not new," they "have been under experiment and development for many years" (Hoyt, et al, 1972, p. 13). No one has recognized this fact more than Commissioner Marland who, among many others, made contributions to the concept during his early professional life as a local school superintendent. Therefore, even though it may have been the policy of various types of administrations in the past to claim originality of newly adopted policies, it does not seem to be the policy of the Commissioner's stand on career education. As Hoyt (et al, 1972, p. 13) states, "No one appears more conscious than Commissioner Marland of the need to emphasize the continuity of career education's development." Therefore, as long as the precursors of career education have not attempted to claim originality of the concept, it seems only reasonable that the issue of originality not be considered a legitimate source of criticism. What can be recognized as being original about the career education concept, however, is the relatively new emphasis and coherence that it has attained because of nation-wide support.

Support for Career Education as a Possible Solution

"Nothing in the world is so powerful as an idea whose time has come" (Victor Hugo).

> "Among the reasons for believing that career education is a concept whose time has come are that: (a) it has emerged at a moment when dissatisfaction with educational practices and outcomes are at a peak, and (b) it promises to attack and improve some of the apparent sources of that dissatisfaction" (Hoyt, et al, 1972, p. 17).

Throughout the nation, civic, industrial and legislative groups at the local, state and federal levels have given wholehearted endorsement and support to career education (Swanson, 1972 a, p. 107; Goldhammer and Taylor, 1972, pp. 4 and 5; Marland, 1972 c, p. 10). A nationwide field survey of past and present career education efforts conducted by Palo Alto Educational Systems, Inc. (1972, p. 60) reveals as a "single most significant conclusion. . . that there is an unusually high level of interest in career education within public schools and state departments of education throughout the country."

In his State of the Union message, January 20, 1972, former President Nixon stated that career education would be an area of major emphasis. He also said that schools need to direct more effort in providing people with broader exposure to and preparation for gainful employment in the world of work. In an effort to give more emphasis to career education, he revealed intentions of proposing intensified support for developing and testing career education models. (Keller, 1972, foreword)

The following comments by Hoyt (et al, 1972, foreword) further indicate that career education is an idea whose time has come:

> "Career education is 'in' in American education this year. The National Education Association has endorsed it and also the National Association of Chief State School Officers, the American Vocational Association, and the National Advisory Council on Vocational Education. The Association of Secondary School Principals has acclaimed it, and the concept is attractive to the National Congress of Parent-Teacher Association. The American Association of School Administrators is holding conferences on career education through its National Academy of School Executives. The American Association of Junior Colleges has joined the favorable chorus. Outside education, the response from organized labor, the U. S. Chamber of Commerce and similar groups have been equally approving. Nowhere does one find organized opposition."

Much of the national acclaim for career education can be attributed to the efforts of the Commissioner of the U. S. Office of Education (USOE), Sidney P. Marland, Jr., who "has made career education the password of his administration"; Marland has not only verbally promoted career education, but has also "allocated much of the discretionary money available to him through various educational appropriations to implementing the concept" (Hoyt, et al, 1972, foreward). The following comments by the Commissioner (Marland, 1971 d, speech) exemplifies the kind of backing he has been giving the career education approach ever since its first conception:

> "all education is career education, or should be. And all our efforts as educators must be bent on preparing students either to become properly, usefully employed immediately upon graduation from high school or to go on to further formal education. Anything else is dangerous nonsense."

The following comments by Margules (Tuckman, no date listed, p. 2) depicts a rather positive general public reaction to Marland's "commitment to a national effort in Career Education" and also provides implications of increasing emphasis and promise for the new approach:

> "The wave of enthusiasm which confronted Commissioner Sidney Marland's commitment to a national effort in 'Career Education' is gaining momentum at all levels of education. The concept has caught the imagination of educators across the country who have been searching for a viable response to the hue and cry of taxpayers, parents and students alike, for a more relevant educational process. Despite the fact that career education has been sporadically implemented in innovative school districts, these efforts will surely increase as educational leaders begin to recognize the far-reaching implications of career development."

The resulting evolution of a national interest in the career education concept is not really too surprising when one considers the formulating forces from which it originated, i.e, existing educational ills coupled with the additional impetus of federal money earmarked for this purpose and a promising increase of local, state and federal emphasis for the approach. Hoyt (et al, 1972, p. 183) brings to point the following closing reminder:

> "Finally, it is important to note that in asking for career education, we base our requests on the needs of the 83 percent of our citizens - both young and adults, in school and out of school - who will never attain a four-year college degree. It is time that education serve best this real majority of our citizens."

Summary and Conclusions

Current educational literature is filled with statements that are: (1) exposing existing problems that are now facing education, (2) convincing that there is a need for educational change, and (3) illustrating that many significant individuals and groups at the local, state, and federal levels nationally support and promote career education as a possible solution to the ills of education. Career education has been nationally implemented in many innovative schools throughout the country, and, as was earlier documented, this approach seems to be much more than just a passing fad.

Need for Effective Evaluation of Career Education Programs. Each year, huge amounts of federal and local tax funds are being spent on the purpose of public education. Much of these funds have been earmarked specifically for the purpose of implementing career education. Both Congress and the general public are beginning to wonder how their money is being spent. Local community members are saying: "If we are to entrust to you educators our resources and our kids, we want some objective measure of whether or not you did!" (Maryland State Board of Education, 1972, p. 29). In addition, teachers and administrators are anxious to find out how some of the new programs they are involved in are coming along. They need to "learn the strengths and weaknesses of the programs and how these programs might be improved" (Owens, 1973, p. 73).

Even with the understanding that large sums of money are being spent in the educational enterprise, one might still legitimately ask the question: "Why is evaluation itself important in education?" In answer to this question, Finn (1973, p. 11) offers the following five reasons:

1. To add to the substantive knowledge of educational processes.
2. To provide information in order to adjust, discard or otherwise change the application of an ongoing educational process.
3. To provide justification for a political-social-economic action relating to education.
4. To create a production (usually paper) which can move through educational bureaucratic systems and thus keep these systems operative.
5. To provide instruments which may be used to carry information on success of the process to the educational community.

There seems to be a lot of agreement among educators on the need for educational evaluation. For example, Tyler (1969, p. 240) states that "This is a period of great potential for progress in American Education. Such progress can only be achieved if evaluation methods are rigorously used in the development of educational programs." Wysong (1971, p. 199), Coster and Morgan (1969, p. 23) similarly agree on the importance of educational evaluation in the following two statements: (1) Wysong - "Evaluation is an important part of any program because it can contribute to the improvement of the program and can provide information useful in communicating program accomplishments and needs to various publics," and (2) Coster and Morgan - ". . . evaluation is not merely essential, but absolutely mandatory as a key element in progress and goal realization."

Failure of Traditional Methods of Evaluation. Despite the need for evaluation, traditional methods of evaluation for innovative educational programs, such as career education, have in the past failed in their attempts to truly assess program effectiveness (Guba, 1973, pp. 1 and 2). Ever since the passage of the Elementary and Secondary Education Act of 1965, schools receiving funding under its provisions were required to provide an evaluation of program efforts. It was at this time that it "became clear that very little was known about public school evaluation" (Ott, 1973, p. 112), and according to Guba (1973, pp. 1-9), there still seems to be much room for continuing research and improvement in educational evaluation: ". . . evaluation as we know it has failed. . . the world of evaluation does indeed require reshaping" (Guba, 1973, p. 2).

"The American educational establishment is currently making a massive effort at self-improvement" (Guba, 1973, p. 1). Consequently, much time, effort, and money have been expended on innovative programs such as career education. However, due to deficiencies in the traditional methods of evaluation, these promising programs have been left "unproved" (Guba, 1973, pp. 1 and 2).

Need for Increased Efforts Directed Toward Developing an Evaluation Design for Career Education Programs. Since: (1) the importance of improved changes in the field of education has been recognized, (2) career education has been offered as a possible solution, (3) there is a promising increase of local, state and federal emphasis for the approach, and (4) traditional methods of evaluation for innovative programs such as career education have in the past failed, increased efforts need to be directed toward the development of an evaluation system to measure the effectiveness of school-based career education programs. It is interesting to note "that the dissatisfactions which produced the demand for career education were the same as those underlying other demanded educational reforms. All involved the demand for accountability" (Hoyt, et al, 1972, pp. 45 and 46).

In an effort to help in determining the real utility and promise that career education programs have to offer, the evaluation design, which follows in this report, was developed. It is hoped that the suggested design will ultimately assist local agencies in determining the effectiveness that their school-based career education program had in contributing to the educational goals they've established.

Definition of Terms and Limitations

Limitations of the Study

I. It should be acknowledged that the evaluation design developed in this project is an adaptation of the Stufflebeam-Guba (Stufflebeam, et al, 1971) CIPP model. The career education evaluation design developed in this report utilizes the four classifications of evaluation (called context, input, process and product) that were identified in the CIPP model, in describing the four stages of evaluation for career education. Just as the four stages of evaluation are used in the CIPP model for yielding information pertaining to different classes of decision-making, so are they used in the career education evaluation design for evaluating the four stages of program improvement for career education that were identified in this project.

II. Worthen (1973, pp. 30 and 31) suggests as a minimal first step in the development of an "ideal" educational evaluation model, that evaluation tasks be structured in juxtaposition against Stufflebeam's four kinds of evaluation which were identified in the preceding paragraph (note Figure V, p. I-44). If one were to successfully take on such an enormous task, the end product would probably result in as near an "ideal" evaluation design as is humanly possible. Such an ideal model would then result in an infinitely complex "taxonomy of evaluation designs."

As Worthen (1973, pp. 28 and 30) further suggests, however, a project such as this is a most "laborious" and painstaking process.

> "Given the staggering complexity of evaluation design processes, when viewed in their entirety, it would seem that attempting to create a taxonomy of evaluation designs would be both naive and inappropriate at this point."

Due to the fact that the evaluation design presented in this report was conducted within limited time and resource limitations, the ideal evaluation model just discussed can presently be considered beyond the mission of this project.

All career education programs are unique in that each school system differs in such aspects as interpretation of educational needs, accumulation and availability of resources and methods of implementation. In order for an evaluation design to be applicable to such a wide variety of programs, it must be somewhat standardized. The more standardized an evaluation design is expected to be, the less detail it can usually afford to stipulate. The evaluation design developed in this project is therefore intended to compromise the following two major criteria: (1) to be general enough to be relevant to a variety of different career education programs and

Figure V

A Proposed Classification Structure For An Ideal Educational Evaluation Model*

EVALUATION TASKS	TYPES OF EVALUATION			
	CONTEXT EVAL.	INPUT EVAL.	PROCESS EVAL.	PRODUCT EVAL.
I. Developing a climate among educators that is supportive of evaluation.				
A. Assessing educator's existing attitudes toward evaluation.				
B. Establishing rapport with participants.				
.				
.				
.				
etc.				
II. Planning and focusing an evaluation.				
A. Establishing premises which will guide the evaluation.				
B. Determining what is to be evaluated and in what sequence.				
.				
.				
.				
.				
.				
etc.				
III. Selecting or constructing instruments.				
.				
.				
.				
.				
etc.				

* Adapted from Worthen (1973, p. 31) by placing Stufflebeam's (et al., 1971) four types of evaluation in juxtaposition against Owen's (1973, pp. 73-79) suggested tasks and roles of evaluation specialists in education (note Appendices E and F for the remaining roles and tasks suggested by Owens and Stufflebeam).

yet, (2) be specific enough to be functionally useful, i.e., offer enough details so that educators do not have to develop their own career education evaluation programs de novo.

In summary, it may be asserted that, ". . . the design and analysis of educational evaluation is a most complex and difficult undertaking" (Stufflebeam, 1973, p. 27); ". . . the process of designing evaluation is much more complex than it appears to be on the surface" (Worthen, 1973, p. 30). While it is doubtlessly recognized that many sections of the career education evaluation design, developed in this report, could ideally be explicated in greater detail and complexity, it is in the interest of applicability and practicality that the design is presented in the format as will be later illustrated in Chapter III.

III. Ironically, the evaluation design illustrated in Chapter III, with all of its flow charts, inputs, processes and outputs, almost looks too mechanical and impersonal to be describing an approach which is, by nature, as personal as career education seeks to be. This seems especially true when one is forced to label and, therefore, picture students and staff as inputs, processes and outputs. Despite whatever implied impersonalization may be inherent in the format of the evaluation design presented in Chapter III, career education may still be distinctly differentiated as a very potential and relevant approach for personalizing and individualizing instruction.

IV. At first glance, the rationale of this report may appear to have overemphasized educational ills to the extent that education is viewed as: (1) an institution which has contribued nearly nothing to society and (2) a primary cause of social ills. These two viewpoints, however, are neither the expressed intent of the rationale nor are they necessarily a valid assumption. The following list of statements by Hoyt (1972, p. 17) illustrate why:

1. Most of the dissatisfaction directed toward education is, in reality, frustration with social ills for which schools bear little fault and to the solution of which they have been able to make only modest contributions.
2. Many of American education's problems are the consequences of success and its strengths outweigh its weakness.
3. The atmosphere is permeated with demands for educational reform, and career education must be viewed in its relationship to these demands.

Along this same vein, the ultimate goal of evaluation should not be considered that of labeling a program as either being "good" or "bad." Even though at times such labels may result as un-anticipated and unavoidable by-products of evaluation, they should not necessarily be considered evaluation's prime objective. The following comment by Stufflebeam (et al, 1971, cover page) will attest to this: "The purpose of evaluation is to improve not to prove."

V. Objective four for this study was to "Apply the evaluation system to a selected career education program and report the results." Once the design for the evaluation system was completed, it was soon discovered that a complete and comprehensive application of the career education evaluation design, including all the necessary phases from context evaluation, through product evaluation, would require a longitudinal study involving anywhere from at least one to five years for final completion. Therefore, in due consideration of the project's time limitations, it was determined by the project participants that the application, as stated in objective four, be considered beyond the present scope of this study.

As a more practical alternative to objective four, the researcher (along with Dr. Orville Nelson, Professor and Research and Evaluation Specialist, Center for VTAE, UW-Stout and Dr. Harold Halfin, Professor and Director of the Center for VTAE, UW-Sout) participated in a third party career education evaluation that was conducted under the team directorship of Dr. Carlyle W. Gilbertson, Professor and Chairman, Department of Counseling and Personnel Services, UW-Stout. The program being assessed by the third party evaluation team was an exemplary project in vocational education, titled "Articulation of Occupational Orientation, Education and Placement in Private and Public Elementary, Secondary and Post-Secondary Schools." The major purpose of the exemplary project was to provide a comprehensive career education to a variety of persons ranging in all ages and grade levels.

Using the experimental and control group approach, the research design employed by the third party evaluation team closely parallels the final two stages of this report's career education evaluation design called process and product evaluation. The primary focus of the process evaluation was on the ongoing procedures and activities, whereas the primary focus of the product evaluation was on the extent to which objectives and outcomes were attained. For further details concerning: (1) objectives of the evaluation, (2) evaluation activities, (3) methods and procedures, (4) research design, (5) instruments developed, (6) data collection and analysis procedures, (7) variables measured,and (8) formats used for this third party evaluation, refer to Appendix M.

Definition of Terms

Appendix L consists of definitions of vocabulary words that are related to the fields of evaluation and career education. The process of evaluation, which involves such a high degree of information exchange, is highly dependent upon a mutual understanding of terminology used between evaluators and decision-makers. The vocabulary list has, therefore, been developed and included in this report for the following two reasons: (1) to provide a basis upon which a mutual understanding of the terms used in this report can be interpreted and (2) to offer a somewhat standardized basis which evaluators and decision-makers may use as a form of reference in communicating meaning.

More of the terms included in Appendix L pertain to the field of career education than they do to the field of evaluation. The source of each term is credited after each definition within the Appendix. For a more complete vocabulary list of terms pertaining to the field of evaluation, refer to some of the appropriate sources listed in Appendix I.

CHAPTER II

METHODS USED IN THE STUDY

The initial method of study used in: (1) identifying the nature of evaluation, (2) developing the evaluation design, and (3) identifying the tasks and considerations involved in administering it consisted of an extensive review of available literature pertaining to career education and evaluation. Sources of review were primarily made from current periodicals, books and ERIC materials.

In developing the rough draft of the evaluation design, the researcher modified and integrated models and methodologies that were currently being used by evaluation specialists in the field of education. These integrated models and methodologies were synthesized with special consideration given to their adaptability to the four stages of program improvement for career education that were identified by the researcher. Similar methods of synthesis were used in compositing variables, data collection and analysis methods, feedback procedures and formats, and criteria for the assessment of the evaluation design. Composites such as these were structured into the portion of the research report concerning tasks and considerations involved in developing and administering the evaluation design. The two synopses of evaluation instruments located in Appendixes C and D were extracted and composited from a variety of major test publishers and from current career education handbooks, guides, and project reports.

An advisory committee was identified at the beginning of this study. Consultation with the committee was made throughout the entire study until the final draft was completed.

CHAPTER III

RESULTS

Definition of Evaluation

A review of literature has revealed the attempts of many authorities to accurately define the term evaluation (Stufflebeam, 1973; Alkin, 1970; Coster and Morgan, 1969; Stufflebeam, et al, 1971; Tyler, 1969; Cutlip, 1971; Kincaid, 1968; Wysong, 1971; Nelson, 1973; Maryland State Department of Education, 1972; Drier, et al, 1972 a; to mention a few). In combining a number of key terms and phrases utilized by such authorities, the following composite definition has been constructed:

> Evaluation is the systematic process of: (1) ascertaining what information is needed, (2) objectively collecting and analyzing through formal means (e.g., measurement, criterion,and statistics) the empirical and logical data related to the information needed, and (3) reporting the information in a functional form which will enhance the judgment of decision-makers in selecting among decision alternatives.

The above general definition contains nine key phrases which require further definition. These nine key phrases and their definitions are as follows:

1. Systematic Process. Evaluation involves coordination of continuous and recurring or cyclical activity. It is an orderly and sequential set of numerous methods and techniques.(Stufflebeam, et al, 1971, p. 40; Wysong, 1971, p. 48; Maryland State Department of Education, 1972, p. 91; Tyler, 1969, p. 245)
2. Ascertaining Needed Information. One of the first steps involved in the evaluation process is the identification of required and useful information. Delineation of such information must be made in consideration of the alternative decisions that have to be made and the values or criteria which will be applied to them. Confirmation and identification of appropriate information requires interaction with the client. Both the evaluator and the client are equally responsible for the identification of needed information. While the decision-maker (client) determines the nature of the domain to be evaluated, it is the task of the evaluator to "point out inconsistencies, difficulties,or additional data that

might modify the decision-maker's view's on the relevance of certain outcomes" (Alkin, 1970, p. 1). The evaluation in essence "critiques the client's formulations and proposes alternative versions" (Stufflebeam, et al, 1971, p. 42). It is important, however, that the evaluator be careful not to off-balance his responsibility to the exclusion of the decision-maker's opinion. This would result in a valuable loss of objectivity. (Stufflebeam, et al, 1971, pp. 41 and 42; Alkin, 1970, p. 1)

3. Objectively Collecting and Analyzing Information. These are processes which make information available through such formal means as measurement, criteria, and statistics. These are the technical aspects of evaluation which must take into account such criteria as internal and external validity, reliability, objectivity, and efficiency (these terms will be defined in the latter part of this chapter). Through careful analysis, collected data can be broken down into forms in which the nature, significance, and relationship of attained variables can be determined. The term "objectivity" implies that the variables to be treated are handled in a manner independent of personal reflections or feelings. (Stufflebeam, et al, 1971, p. 42)

4. Formal Means, e.g., "Measurement, Criterion, Statistics. Measurement is the assignment of numerals to entities according to rules, and such rules usually include the specification of sample elements, measuring devices and conditions for administering and scoring the measuring devices. A criterion is a rule by which values are assigned to alternatives and, optimally, such a rule includes the specification of variables for measurement and standards for use in judging that which is measured. Statistics is the science of analyzing and interpreting sets of measurements." (Stufflebeam, 1973, p. 21)

5. Empirical and Logical Data, i.e., Information. Information helps to reduce the uncertainty that decision-makers have when selecting among alternatives. Information consists of "descriptive and interpretive data about entities and their relationships, in terms of some purpose" (Stufflebeam, et al, 1971, p. 41). It can originate factually through experimental encounter or be induced intuitively in harmony with sound reasoning. (Sufflebeam, et al, 1971, p. 41; Wysong, 1971, pp. 48 and 50)

6. Reporting the Information. One of the final steps in evaluation involves giving the collected information to the decision-maker. This involves fitting the information together into a format that "best serves the purposes of the evaluation." (Stufflebeam, et al, 1971, p. 42)

7. Functional Form. Unless the information is reported in a format with functional form, the decision-maker will not be able to make optimum use of the evaluation. In order to be functional, evaluation findings must be reported in a form which is not only

readable and understandable to the evaluator and decision-maker, but also related to the values and criteria which were identified and mutually agreed upon by both the decision-maker and the evaluator. In addition to the considerations just mentioned, Stufflebeam (et al, 1971, pp. 42 and 43) further points out that, in order to be functional, information "must satisfy three classes of criteria: scientific (internal validity, external validity, reliability, and objectivity), practical (relevance, importance, scope, credibility, timeliness, and pervasiveness), and prudential (efficiency)." These classes of criteria will be discussed in more detail in the latter part of this chapter.

8. Enhance Judgment of Decision-Makers. "Data cannot make the decisions for people. . .evaluation still requires people to make judgments and decisions" (Wysong, 1972, p. 48). The ultimate purpose of evaluation is to provide a rational basis that will increase the value or worth of the judgment of evaluators and decision-makers. Stufflebeam (1973, p. 21) defines judgment as "the assessment of values to alternatives." He also defines judging as "the act of choosing among. . .decision alternatives, hence the act of decision-making."(Stufflebeam, et al, 1971, p. 334)

   There seems to be some controversy concerning the evaluator's role in judging. Some feel that participation on the evaluator's part in judging "destroys his objectivity and, hence, his utility," while others feel that the act of judging is a valid part of his role.(Stufflebeam, et al, 1971, p. 43)

   In the case of evaluations involving contracts, the role of the evaluator in the act of judging depends largely upon the terms of agreement between the evaluator and the decision-maker.

   Wysong (1971, p. 48) has one more consideration concerning judgment which seems to merit mention at this point: "Evaluation is not a means of merely labeling a program as being 'good' or 'bad.' Such a label is usually not helpful in promoting program development and improvement and decision-making. It gives no direction for future change."

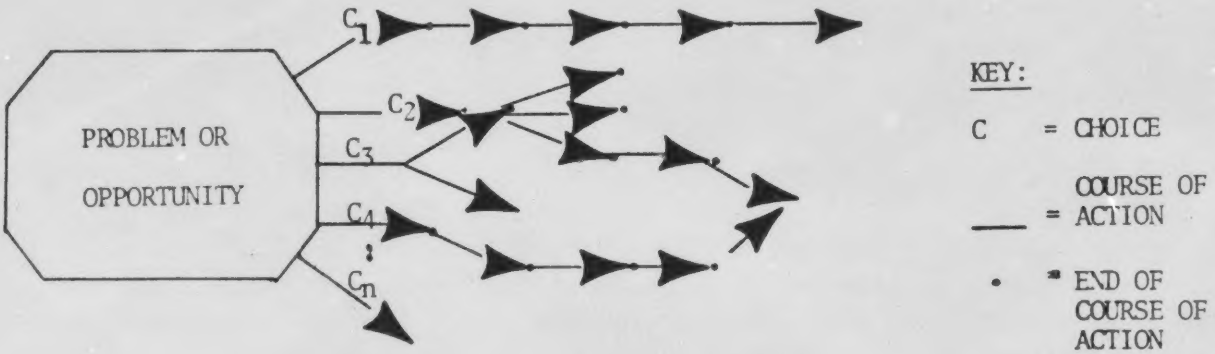
9. Selecting Among Decision Alternatives. Once the necessary information is functionally provided, decision-makers are then better equipped to make preferences among two or more optional courses of action. Among such courses of action, there is usually at least one choice requiring some form of altered action. From the standpoint of education, altered action can especially be an important consequence of evaluation, considering the fact that "educational improvement occurs only as a result of some altered action ."(Stufflebeam, et al, 1971, p. 40)

Figure VI contains a chart designed by Nelson (1973, taken from speech) which illustrates four important concepts that decision-makers might want to consider in selecting among optional courses of action. The concepts, as depicted in Figure VI are as follows:

1. The selection of one course of action has a tendency to limit the decision-maker from the many other plausible alternative courses of action that are available.
2. Some choices limit future courses of action more than others.
3. No one choice presents an absolute answer to the problem or opportunity. And/or,
4. The probability of success of the alternatives are not fully known.

Figure VI

Process of Decision Making



The process of decision-making with all its optional courses of action can generally be broken down into four basic decision alternatives that decision-makers ultimately face when concerned with the future orientation of their program. As previously suggested in Figure VI, these four ultimate decisions entail prerequisites of an infinite number of sub-decisions or considerations.

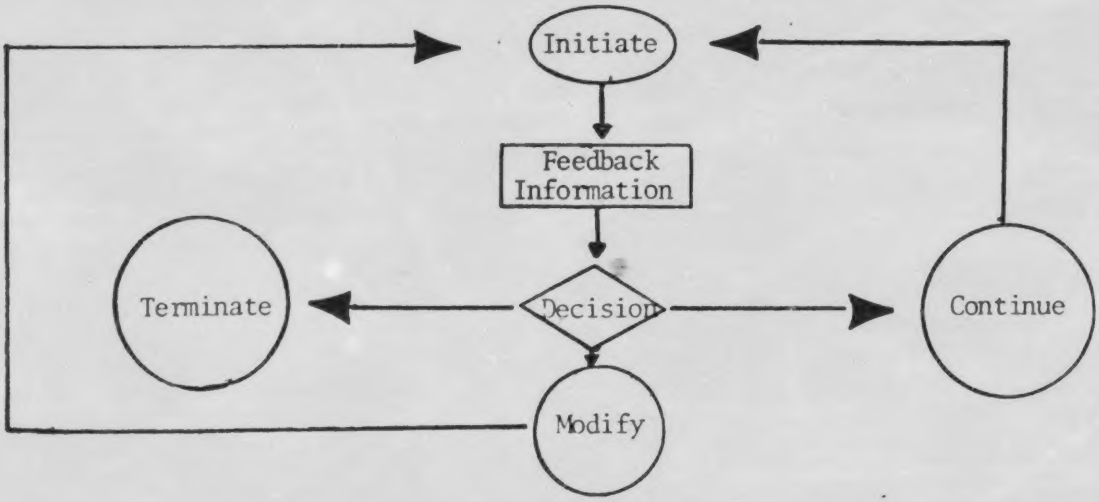
Figure VII illustrates the four basic alternatives which can be considered options to choose from by decision-makers. The four alternatives are as follows:

1. Initiate program efforts and begin generation of necessary feedback information.
2. Terminate the program efforts made thus far and, consequently, end future program progress as originally intended.
3. Modify the program in some way, e.g., by changing such things as processes, inputs, or even the standards for the intended objectives or outputs.
4. Accept program outcomes and/or present progress and continue upcoming processes as scheduled.

In an attempt to briefly sum up what has been presented thus far on the nature and definition of evaluation, the following two simplified definitions are presented at this point: "Evaluation, in short, is the common sense of learning from experience. In the final step, we seek, through research, answers to such questions as 'How did we do; would we have been better off if we had tried something else'" (Cutlip, 1971, p. 129). In general, "evaluation may be thought of as the processes that are involved in measuring the consequences of goal-oriented action" (Griessman, 1973, p. 90).

Figure VII

Basic Decision Alternatives



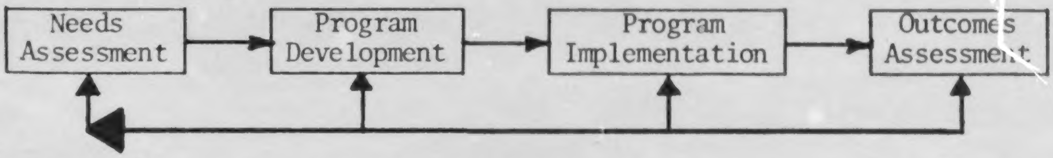
The Integrated Evaluation Design

Four Stages of Program Improvement for Career Education

After reviewing several sources (Alkin, 1970, pp. 2 and 3; Stufflebeam, 1973, p. 22 and 1971, pp. 79-84; Caldwell, 1973, pp. 35 and 36; Randall, 1973, pp. 43-46; Coster and Morgan, 1969, pp. 6-13; Tyler, 1969, pp. 247-259) concerning educational change and program development, it was discovered that most educational programs, including career education, evolve through definite cycles which can be categorized into distinct developmental stages. By integrating a variety of information on program development and decision areas from the sources just mentioned, together with a review of information on career education programs, the researcher has identified four major stages that many career education programs seem to follow through in the process of establishing program improvement. These four states are as follows: (1) needs assessment, (2) program development, (3) program implementation, and (4) outcomes assessment. These four developmental stages, which actually represent a cycle of change or improvement within educational programs, can be placed upon a continuum as depicted in Figure VIII.

Figure VIII

Career Education's Four Major Stages
of Program Improvement



Within each of the developmental stages, a sequence of events takes place. These sequential events which are common to each of the stages are illustrated in Figure IX (p. III-8). As Figure IX shows, each stage of program improvement involves: (1) the capture of established inputs which are derived from the educational domain or environment in which the school system is part of, (2) a process which includes all transactions that are necessary to complete the transition from raw input material to actual output, and (3) the actual output which is temporarily stored and then eventually circulated into the educational domain* for further use. Figure X (p. III-9) was constructed by placing the components of Figure IX (p. III-8) into the continuum of Figure VIII (p. III-6). Descriptions of each of the stages of program improvement for career education, including appropriate reference to the various inputs, processes, and outputs as depicted in Figure X (p. III-9) are as follows.

Needs Assessment. During this stage of program improvement, motivation for program change is initiated. (Refer to the model in Figure X, p. III-9).

Inputs. The inputs for this stage of development would generally include such things as the involvement of consultants, community members, parents, educational staff (including local, state, and federal levels), students, money, and the use of school and community facilities.

Processes. The major processes occurring within this stage are: (1) the definition of the educational domain to be served, (2) the delineation and priority ranking of the needs of the educational domain, and (3) the identification of the problem areas needing improvement

---

* The term, educational domain, as it is used in this paper, is defined as: those resources (including people, school, and community facilities) which have authority or control to govern or influence the decision-making processes upon which educational objectives, policies, criteria, and standards for a specified educational domain are established.

Figure IX

Input - Process - Output Chart

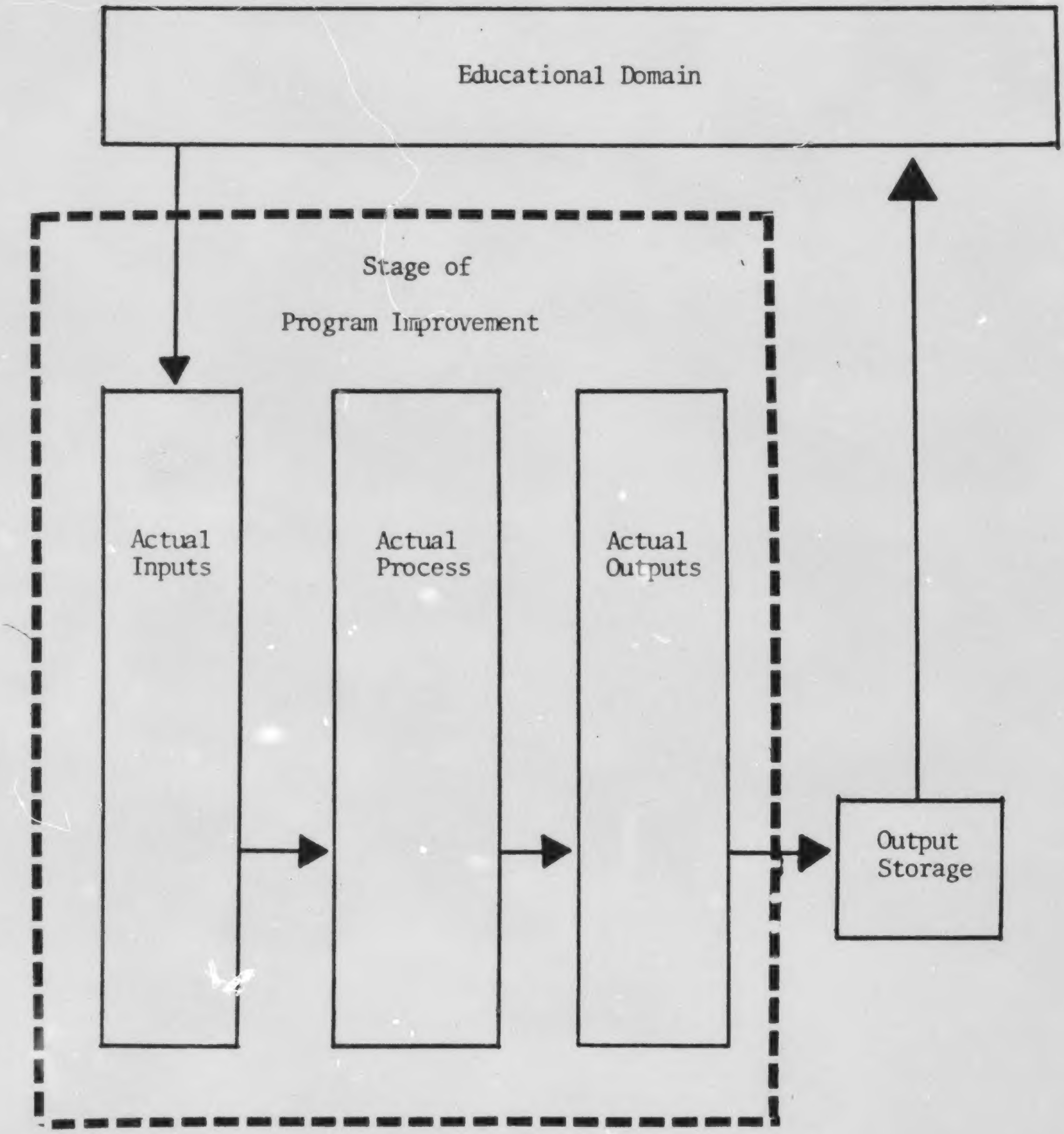
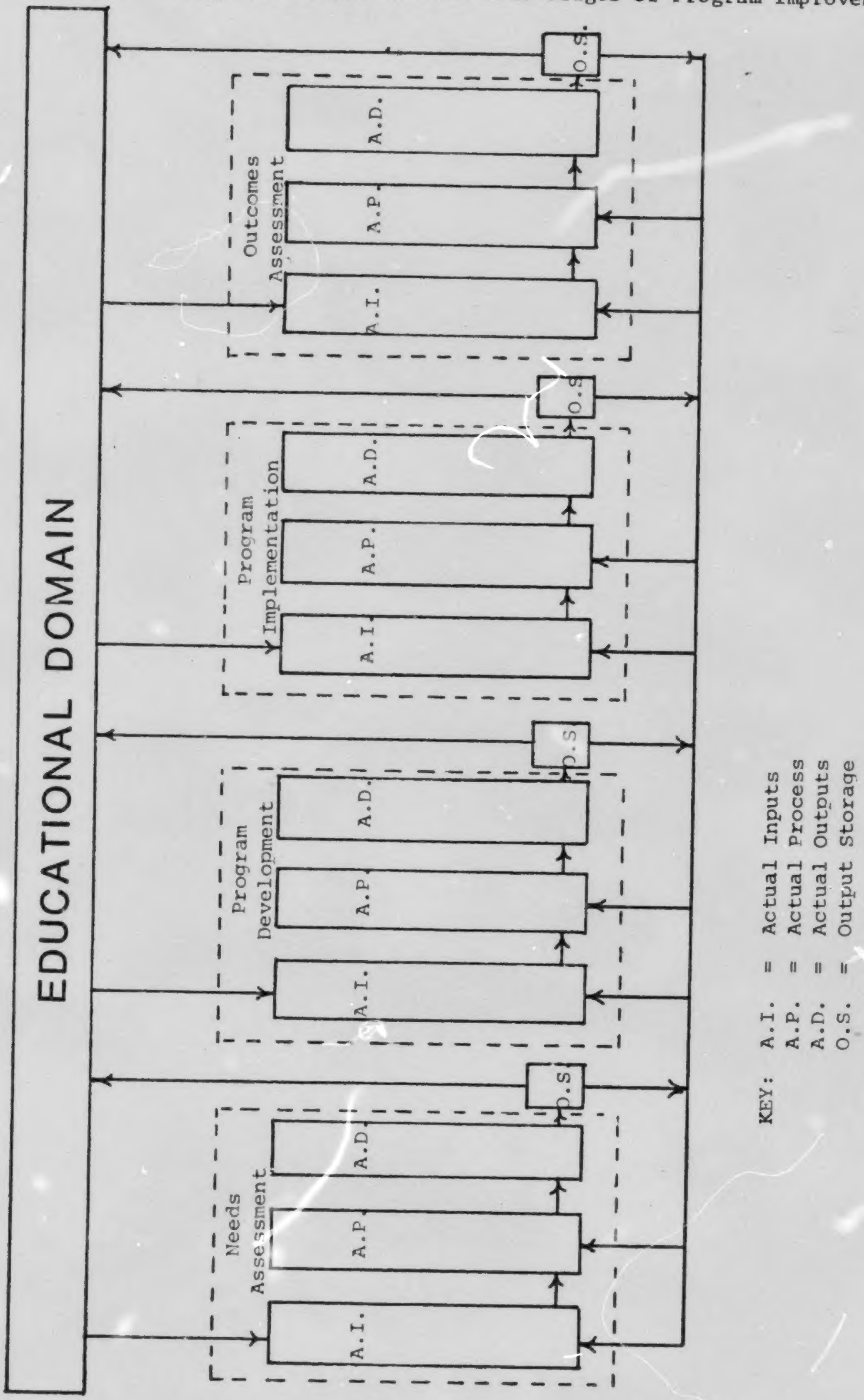

Educational Domain
Stage of
Program Improvement
Actual Inputs
Actual Process
Actual Outputs
Output Storage

Figure X

Combined Component Chart for the Four Stages of Program Improvement


EDUCATIONAL DOMAIN
Needs Assessment
A.I.
A.P.
A.D
O.S.
Program Development
A.I.
A.P.
A.D.
O.S
Program Implementation
A.I.
A.P.
A.D.
O.S
Outcomes Assessment
A.I.
A.P.
A.D.
O.S.
KEY: A.I. = Actual Inputs
A.P. = Actual Process
A.D. = Actual Outputs
O.S. = Output Storage

and the consequent establishment of specific program objectives that are explicitly stated in terms of observable or measurable behavior.

Outputs. The actual output would be an agreement among needs assessment participants pertaining to: (1) the definition of the educational domain to be served, (2) an established priority ranking of its needs, and (3) an identified list of objectives that somehow need to be implemented.

The objectives of one program of career education will usually differ in a variety of ways from the objectives of other programs due to the tendency of different educational domains to delineate and rank needs differently. In order to give the reader some suggestions of possible educational needs and consequent objectives that could be established within career education programs, a synopsis of selected career education goals for schools developed by Keller (1972, pp. 16-27) and a list of eight elements, along with eight desired outcomes identified by Ohio State's Center for Vocational and Technical Education (Miller, 1972 a, pp. 20-23), are listed in Appendixes A and B, respectively. The synopsis by Keller was developed through detailed examination of a variety of career education handbooks, guides, and instructional units and the elements and outcomes by Ohio State were developed for use in their Comprehensive Career Education Model (CCEM) project.

Program Development. This stage, in essence, focuses on the development of a means to achieve the ends identified in the needs assessment. (Refer to the model in Figure X, p. III-9).

Inputs. The major inputs used in this stage of improvement are: (1) the priority ranked list of objectives obtained from the needs assessment, (2) the time and effort of consultants, community members, parents, students, and educational staff, including local, state, and federal levels, (3) money, and (4) school and community facilities and materials.

Processes. The process consists of designing a program which can best accomplish the objectives established in the first stage. In-process functions that are performed in the program development stage include: (1) staff and public orientation to the needs assessment, including in-service training, curriculum planning workshops, etc., (2) development and specification of alternative strategies and procedures for future implementation, (3) development of criteria to select the most feasible procedural alternative, (4) specification, attainment, and preparation of needed resources, and (5) budget allocation, scheduling, and organizing of all available resources.

Outputs. The general output resulting from the process of program development is a set of operating guidelines which include: (1) a selected procedure that specifies, within the limitations of available resources, a plan of action for implementing the identified objectives and (2) an organized schedule of resources which compliments the work to be performed.

Program Implementation. This is the action stage of programmed improvement where the procedures, strategies, and resources of the programming stage are operationalized into activity. (Refer to the model in Figure X, p. III-9).

Inputs. The inputs for this stage include the procedural approach selected in the program development stage with all its various instructional strategies and attained resources.

Processes. The general process involved during this stage is the actual placing of the plan of action, as prescribed in the program development stage, into action.

Outputs. During the implementation stage, the objectives that were earlier established in the needs assessment are finally actualized to a certain measurable degree. Therefore, the outputs of implementation are dependent upon: (1) the expected student competencies and outcomes that were delineated in the first stage and (2) the initial competencies of the students enrolled in the first stage. Outputs obtained in the form of student gain or growth would generally fall under the classifications of the cognitive, affective, and psychomotor domains.

Outcomes Assessment. This is the final stage of program improvement where decision-makers ask the question, "How did we do, would we have been better off if we had tried something else?" (Refer to the model in Figure X, p. III-9).

Inputs. The inputs of this stage consist of information concerning all the processes and outcomes that developed during each of the preceding stages.

Processes. The general process involves finding out to what extent the desired outcomes established in the needs assessment stage have been achieved. This is basically done by focusing on how the actual outcomes of the implementation stage relate to: (1) the intended outcomes that were determined in the needs assessment stage, (2) the effectiveness of the plan of action and the resources that were selected and attained in the program development stage, and (3) the efficiency in which the plan of action and resources were operationalized in the implementation stage.

Outputs. The outcomes of this stage consist primarily of information pertaining to the effectiveness and efficiency of all the phases of the program's full cycle. These are the products that can, in essence, perpetuate or re-cycle the process of program improvement because they offer the substantial information and criteria that decision-makers need in order to select among the three ultimate decision alternatives of: (1) affecting change in areas that need improvement, through program modification, (2) accepting program outcomes and progress and continuing processes, as scheduled, or (3) terminating program efforts.

In order to summarize the four stages of program improvement and bring their focus closer to the perspective of career education, the four stages of program improvement have been inter-related with a slightly modified edition of the ten action steps for implementing career education developed by Hoyt (et al, 1972, p. 150) as shown in Table II (p. III-14). By the time action step seven or the implementation stage for career education is reached, the ten substeps required for implementation, also developed by Hoyt (et al, 1972, p. 170), as shown in Table III (p. III-15), should have been completed.

Four Stages of Evaluation for Career Education

Earlier in the previous section concerning the stages of program improvement for career education, it was mentioned that a full cycle of change or improvement occurs within career education programs and also, that this cycle could be placed upon a continuum of career education's improvement cycle (Refer to p. III-6). It is recommended, however, that

Table II

Stages of Program Improvement for Career Education Inter-related with the Ten Action Steps for Implementation

Stage I - Needs Assessment

1. Organize the appropriate interactive network of interested individuals and groups (e.g., school staff, parents, community members, and evaluation personnel).

2. Put the evaluative process in operation to determine how well the system is working. (This process should continue throughout all four stages.)

3. Gain an understanding of the concepts of career education and establish appropriate educational objectives.

4. Study the current educational system to determine the changes necessary to turn it into a true career education system.

5. Create a feedback system to use evaluation findings to adapt and improve the career education program. (This process should continue throughout all four stages.)

Stage II - Program Development

6. Inventory and marshal all available resources.

7. Begin planning the career education system most appropriate for your community.

8. Seek the cooperation of all necessary organizations, institutions, and individuals.

Stage III - Program Implementation

9. Implement the system (note Table III, p. III-15).

Stage IV - Outcomes Assessment

10. Make provision for a program of maintenance to sustain the vital parts of the system and the initiative, and tie these activities into the interactive network (i.e., (1) determine the effectiveness and efficiency of all phases of the program's full cycle, (2) maintain and recycle the vital aspects, and (3) modify or exclude the inefficient and ineffective aspects).

Table III

Ten Substeps Required for Implementation

1. Contact will have been made with state educational agencies and available guidelines and state policy endorsed by local education authorities.

2. A compendium of educational objectives will have been established at every level where career education is to be implemented in the first target year.

3. The process of career education will have been examined by school personnel and community resource persons and experimental programs tried and evaluated on a limited basis.

4. An evaluation of existing school programs and activities has been initiated, resulting in recommendations for changing specific parts of the curriculum.

5. Professional personnel and community educational resource persons will have formulated new strategies and programs and teachers will have received whatever in-service retraining is required.

6. New programs and activities will be ready for implementation. Detailed descriptions will be available for every new course or learning activity concerned with career education.

7. Estimates of faculty time and the need for special equipment and facilities will have been determined and funds will have been provided.

8. Detailed budgetary procedures will have been followed by determining the cost of new programs and activities.

9. Cost-saving measures will have been recorded, particularly from those courses, programs,and activities that may have been deleted from the original program of instruction.

10. Following an analysis of cost and benefits relative to new programs and activities, alternative strategies will be examined to permit the phasing of courses, programs,and activities of high priority into immediate operation, while assigning new implementation dates to activities of lower priority.

evaluation begin as early as possible in program development and continue throughout all consequent phases in order to keep the career education program constantly tested for continuous improvement (Maryland State Department of Education, 1972, p. 91; Tyler, 1969, p. 241; Wysong, 1971, pp. 48 and 52).

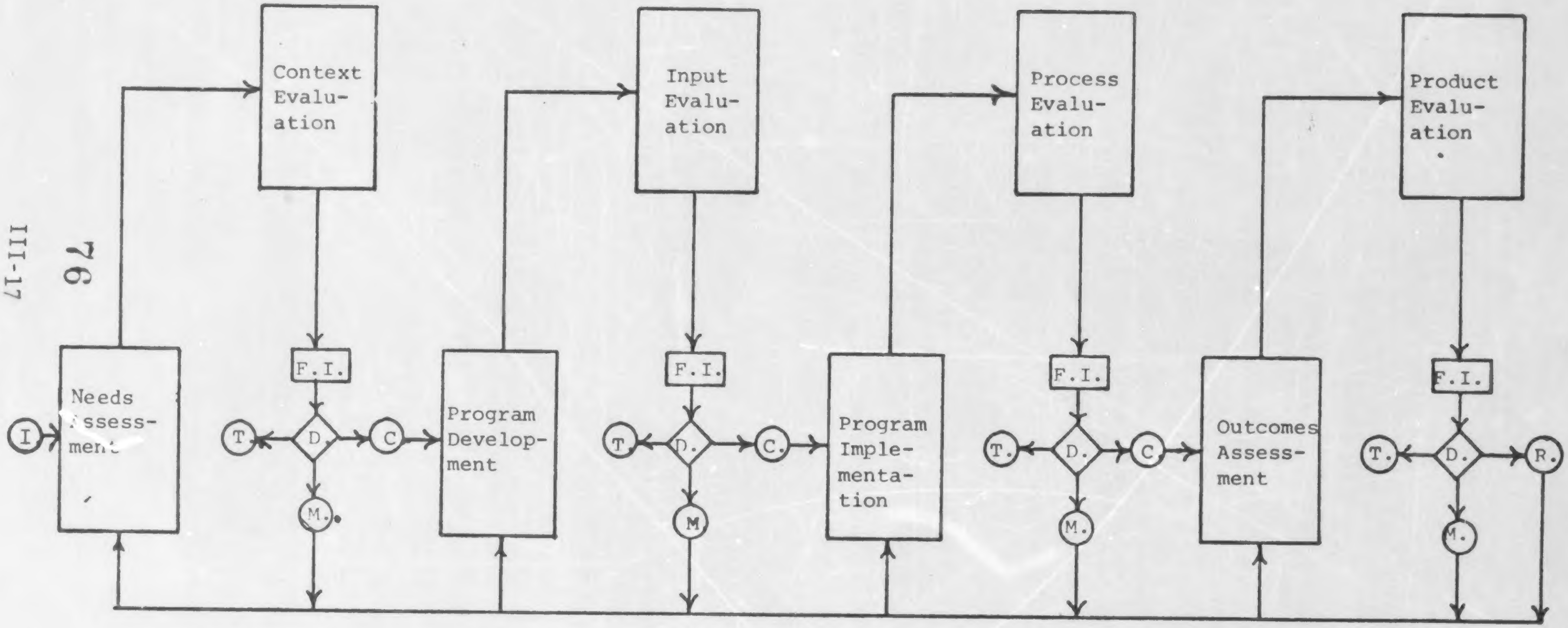
Stufflebeam (et al, 1971, pp. 215-235) has identified four general kinds of evaluation that were designed to yield information pertaining to four classes of decisions that were established as part of the Stufflebeam-Guba CIPP model. These four types of evaluations could be readily adapted to the continuum shown in Figure VIII (p. III-6) by placing them along the cycle of program improvement for career education as illustrated in Figure XI (p. III-17). These four classifications of evaluation, called context, input, process, and product evaluation will be used in this report to describe the four stages of evaluation that could occur during each of the stages of program improvement for career education.

Notice in Figure XI (p. III-17) that: (1) the decision to initiate program efforts precedes the needs assessment stage, (2) the general purpose common to each of the four stages of evaluation is to supply decision-makers with feedback information that will aid them in selecting among the three ultimate alternatives of either terminating, modifying or continuing the various stages of program improvement, and (3) the last stage of program improvement is the only stage that allows the option of deciding whether or not to re-cycle (R.) the entire program of improvement.

Figure XII (p. III-18) shows the typical sequence of events that takes place within each of the four stages of evaluation. Like the stage of program improvement diagrammed in Figure IX (p. III-8), the activities within

Figure XI

Cycle of Program Improvement

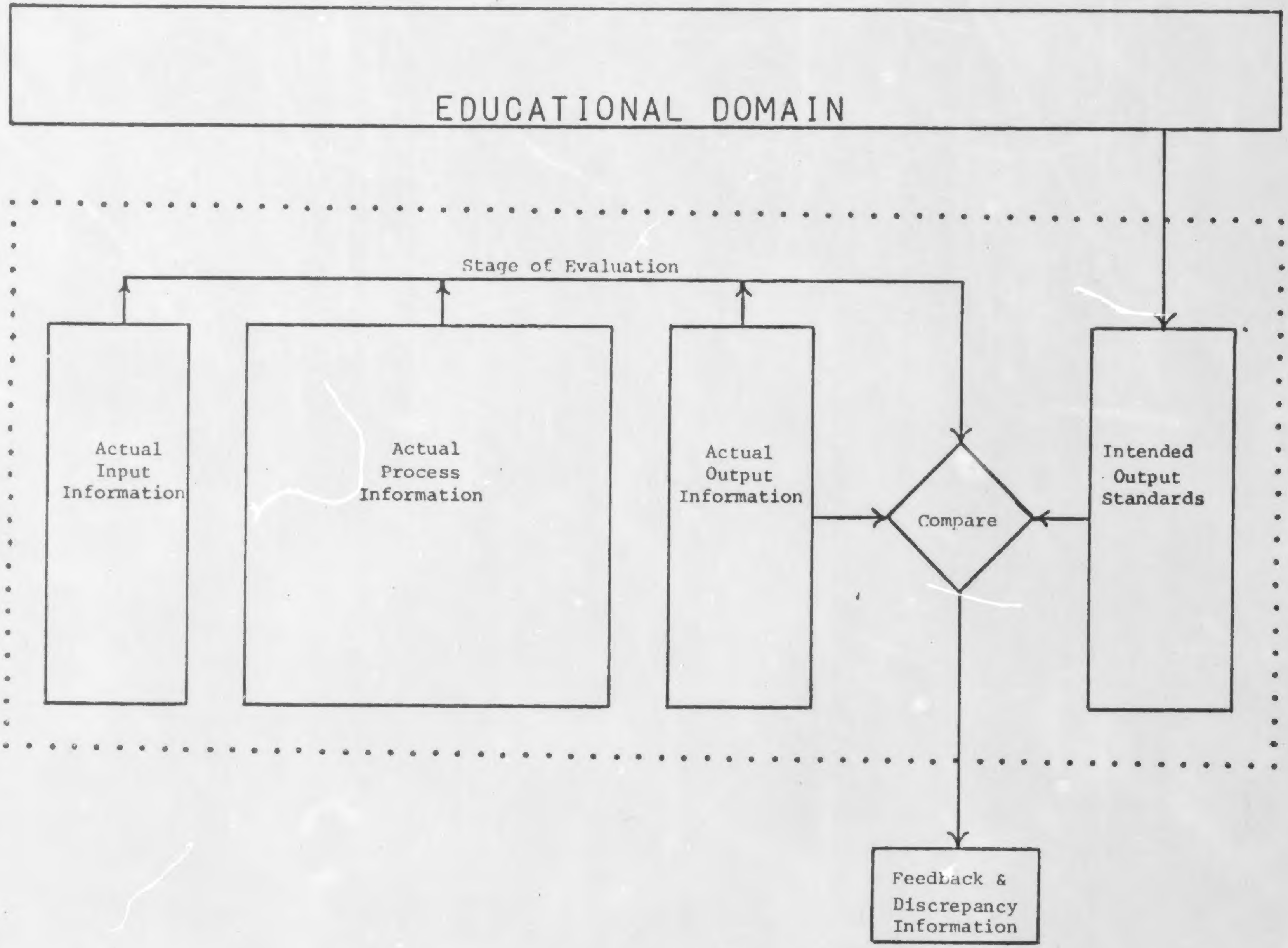

I
Needs Assessment
Context Evaluation
F.I.
D.
T
C
M.
Program Development
Input Evaluation
F.I.
D.
T
C.
M
Program Implementation
Process Evaluation
F.I.
D.
T.
C.
M.
Outcomes Assessment
Product Evaluation
F.I.
D.
T.
R.
M.

Key:

I. = Initiate Program Efforts
F.I. = Feedback Information
T. = Terminate
M. = Modify
C. = Continue
D. = Decision
R. = Recycle

Figure XII

Evaluation Process Chart


EDUCATIONAL DOMAIN
Stage of Evaluation
Actual Input Information
Actual Process Information
Actual Output Information
Compare
Intended Output Standards
Feedback & Discrepancy Information

each of the four kinds of evaluations involves a relationship between inputs, processes, and outputs. In the case of each of the stages of evaluation, however, this relationship involves only the gathering, analyzing, and reporting of information pertaining to the inputs, processes, and outputs, rather than the actual delineation, attaining, and operationalizing of these events.

Generally speaking, each of the four stages of evaluation consists of the following sequential activities: (1) information pertaining to inputs, processes and outputs is collected, (2) comparisons between actual outputs and the intended output standards (as determined by the educational domain) are made, and (3) the results of number one and two above are synthesized, analyzed, and then reported functionally in the form of feedback and discrepancy information. Descriptions of each of the stages of evaluation for career education are as follows.

Context Evaluation. This is the stage of evaluation where criteria is established for the development of objectives. Its general purposes are:

1. To define the boundaries of the educational domain to be served.
2. To describe the actual conditions of the educational domain.
3. To determine the proposed ideal conditions for the educational domain.
4. To identify the unmet needs of the educational domain by determining discrepancies between actual and ideal conditions.
5. To ascertain barriers causing the needs from being met.
6. To define the values, attitudes, and priorities of the educational domain.
7. To specify objectives which indicate how much change is actually wanted.

Categories and examples of discrepancy information which may indicate that career education needs are not being met are:

1. Academic Motivation - lack of student interest in school subjects.
2. Instructional Relevancy - lack of student knowledge of the relationship of instruction to the real life implications of the world of work.
3. Career Awareness - lack of student exposure to the wide range of educational opportunities, career options, and consequent life styles that are available in the world of work.
4. Orientation to the World of Work - student unfamiliarity with the nature of our work-oriented society with all of its work attitudes, promise, and problems.
5. Self Awareness - lack of student self-understandings (e.g. of their own interests, aptitudes, and attitudes) and knowledge of how the self relates to the different styles of life which accompany different types of work.
    - a. Interests - lack of knowledge about one's own personal preferences and concerns, e.g., motivational influences that affect skill performance.
    - b. Aptitudes - inability to learn the skills involved in various kinds of work.
    - c. Attitudes - personality characteristics and value orientations which tend to indicate an inability to satisfactorily relate to self, others, situations and ideas, as evidenced by a lack of such personality traits as self-identity, self-esteem, prestige, and confidence.
6. Career Planning Skills - lack of student knowledge necessary for employability development, i.e., an inability to perform the skills essential in preparing the self to successfully relate to and function within the world of work.
7. Decision-Making Skills - inability to satisfactorily select (tentatively or otherwise) a career among several occupational alternatives, through the careful and systematic consideration and integration of such relevant factors as self-awareness and career awareness.
8. Job Readiness - lack of job entry-level skills among students who exit school; a possible consequence of insufficient "hands-on" work experience.

9. Demographic - evidence of unusually high rates of such statistical records as school drop-outs, absenteeism, unemployment, crime, drug addiction, and recidivism.

10. Barriers - presence of factors that restrict or impede the effective implementation of career education, e.g., the presence of unequal career and educational opportunities among students of differing socio-economic, racial, and cultural backgrounds.

Input Evaluation. The general purposes of input evaluation are:

1. To provide information pertaining to all the available resources and alternative strategies that could be used within the educational domain in order to achieve the objectives stated in the needs assessment stage.

2. To provide criteria that will assist decision-makers in selecting the best plan of action.

Discrepancy information is obtained during input evaluation by comparing the alternative procedural designs or plans of action with the criteria of anticipated requirements demanded by the objectives established in needs assessment.

Process Evaluation. This stage of evaluation occurs once the selected plan of action and the attained resources have been put into operation. The major purpose of process evaluation is to provide information which will assist appropriate educational staff in the continuous process of monitoring, record-keeping, refining, and controlling of implementation plans and procedures, i.e., to detect and predict present and potential defects in resources, procedural designs, and methods of implementation. The record-keeping task in process evaluation is important, not only for describing what is actually taking place during implementation, but also for later use in interpreting actual process outcomes.

Discrepancy information is obtained during process evaluation, by comparing differences between the actual procedural performance and the intended procedural design (i.e., by comparing actual events with intended process activities).

Product Evaluation. This stage of evaluation occurs after all the stages of program improvement have completed a full cycle. The general purpose of the product evaluation is to provide information which will help determine to what extent the desired objectives established in the needs assessment stage have been achieved. According to Stufflebeam (et al, 1971, p. 232) this generally involves the following activities:

1. Devising operational definitions of objectives.
2. Measuring criteria associated with the objectives of the activity.
3. Comparing these measurements with pre-determined absolute or relative standards.
4. Making rational interpretations of the outcomes, using the recorded context, input, and process information.

The end product of this stage of evaluation results in an interpretation of the overall effectiveness of the entire cycle of program improvement.

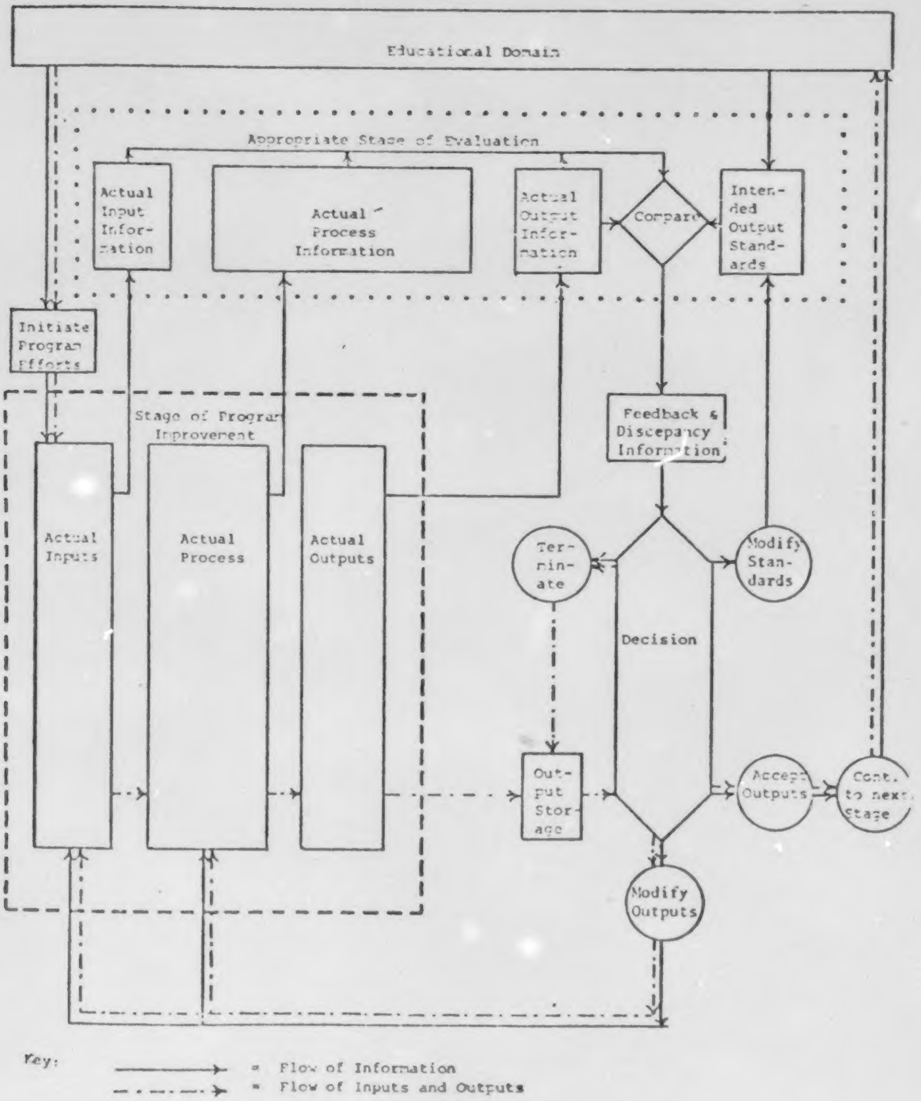
The discrepancy information obtained in this stage of evaluation is obtained by comparing information pertaining to actual program outcomes against the intended outcomes determined in needs assessment.

The Total Evaluation System

Figure XIII (p. III-23) illustrates how a typical section of the total evaluation system looks when the evaluation process chart, the input-process-output chart, and the basic decision alternatives are all combined. The sequence of events or activities that occur within this typical section of the total evaluation system are as follows:

Figure XIII

Evaluation Process Chart, Input-Process-Output Chart and the Basic Decision Alternatives Combined


Educational Domain
Appropriate Stage of Evaluation
Actual Input Infor-mation
Actual Process Information
Actual Output Infor-mation
Compare
Inten-ded Output Stand-ards
Initiate Program Efforts
Stage of Program Improvement
Actual Inputs
Actual Process
Actual Outputs
Feedback & Discepancy Information
Ter-min-ate
Decision
Modify Stan-dards
Out-put Stor-age
Accept Outputs
Cont. to next Stage
Modify Outputs
Key:
= Flow of Information
= Flow of Inputs and Outputs

1. Information and resources procured from the educational domain are stored as actual inputs within the appropriate stage of program improvement.

2. Information pertaining to the actual inputs is collected and stored by the appropriate stage of program evaluation.

3. The actual inputs are processed in a fashion appropriate to the stage of program improvement.

4. Information pertaining to the actual process is collected and stored by the appropriate stage of program evaluation.

5. The actual outputs are stored until a decision can be made concerning their future destiny.

6. Information pertaining to actual outputs is collected and stored by the appropriate stage of evaluation.

7. Comparisons and discrepancies between actual output information and the criteria of the intended output standards are made by the appropriate stage of evaluation.

8. Information pertaining to actual inputs, processes, and outputs are synthesized and analyzed, along with the comparisons between actual output information and the criteria of intended output standards by the appropriate stage of evaluation.

9. The combined information resulting from the appropriate stage of evaluation is reported functionally to decision-makers in the form of feedback and discrepancy information.

10. An ultimate decision is made to do one of the following:

    a. Terminate program efforts.

    b. Improve the actual outputs by re-cycling them and modifying the inputs and processes that created them.

    c. Modify the criteria pertaining to the intended output standards in order that they conform more realistically with the actual outputs.

    d. Accept program outcomes and present progress and continue up-coming processes as scheduled.

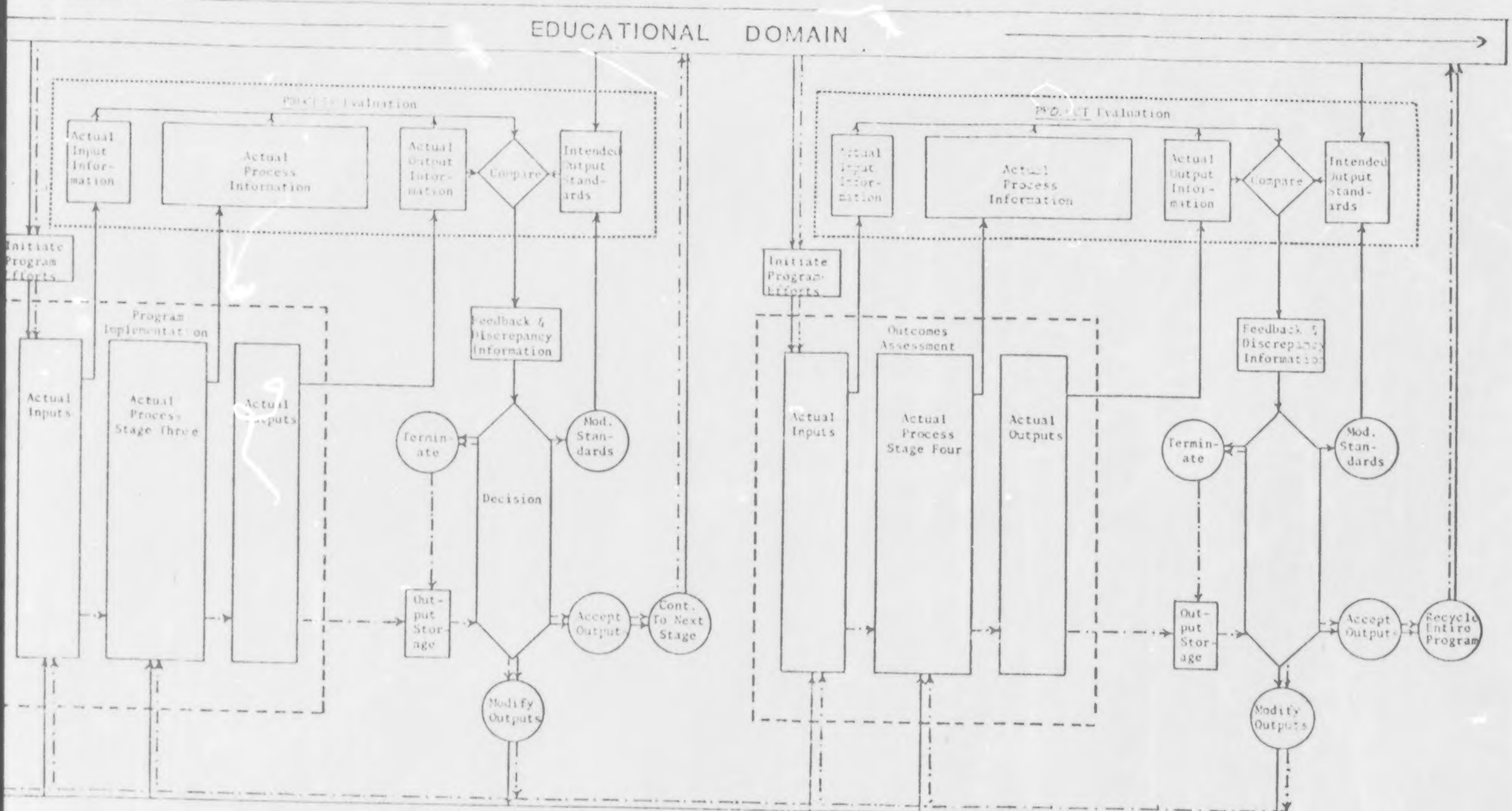
Figure XIV (p. III-25) represents a model which shows what the total evaluation system looks like when the typical evaluation section shown in Figure XIII (p. III-23) is placed along the continuum depicting the cycle

Figure XIV

THE TOTAL EVALUATION SYSTEM

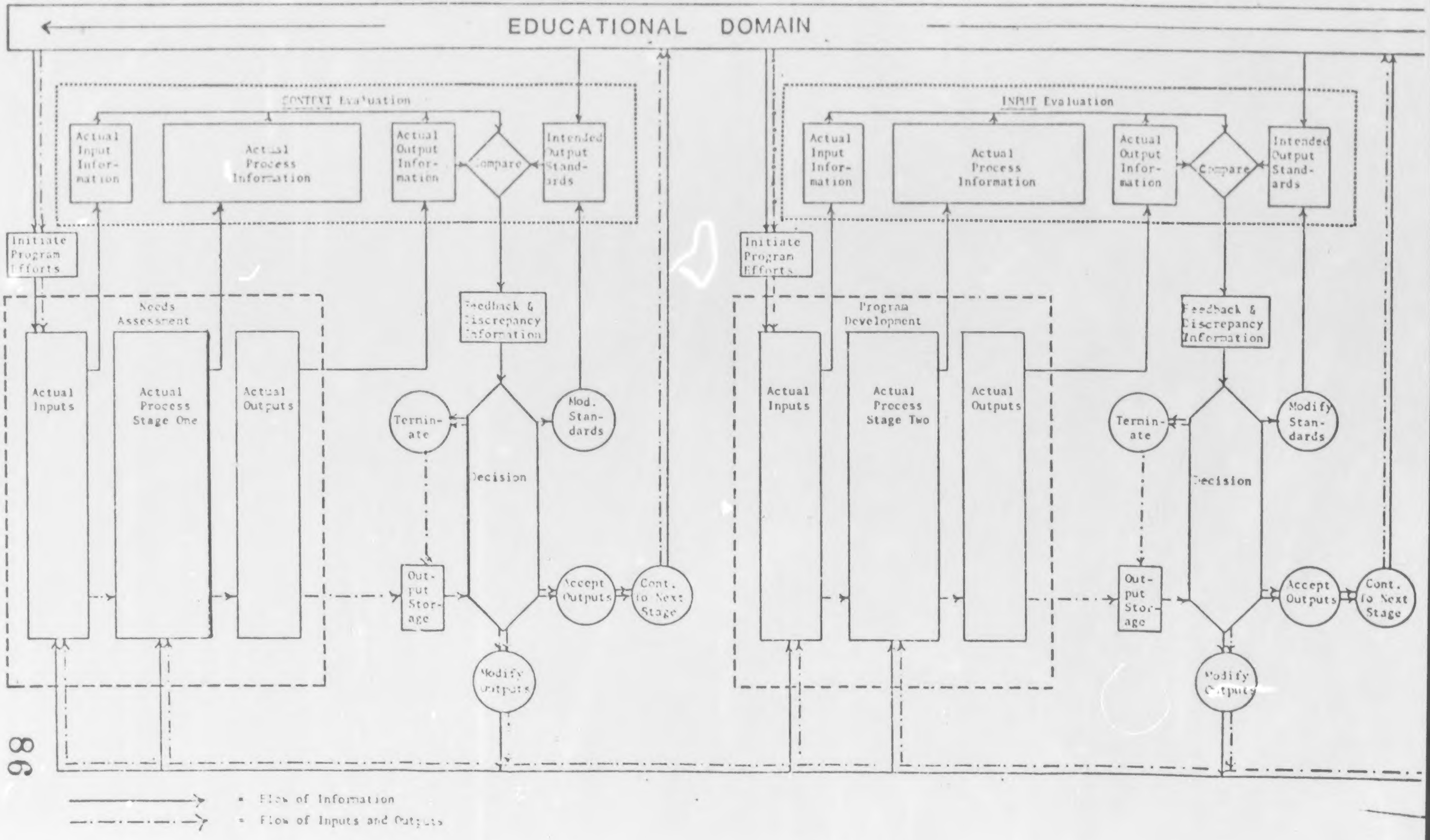
XIV

UATION SYSTEM


EDUCATIONAL DOMAIN
PROCESS Evaluation
Actual Input Infor-mation
Actual Process Information
Actual Output Infor-mation
Compare
Intended Output Stand-ards
Initiate Program Efforts
Program Implementation
Actual Inputs
Actual Process Stage Three
Actual Outputs
Feedback & Discrepancy Information
Termin-ate
Decision
Mod. Stan-dards
Out-put Stor-age
Accept Output
Cont. To Next Stage
Modify Outputs
PRODUCT Evaluation
Actual Input Infor-mation
Actual Process Information
Actual Output Infor-mation
Compare
Intended Output Stand-ards
Initiate Program Efforts
Outcomes Assessment
Actual Inputs
Actual Process Stage Four
Actual Outputs
Feedback & Discrepancy Information
Termin-ate
Mod. Stan-dards
Out-put Stor-age
Accept Output
Recycle Entire Program
Modify Outputs

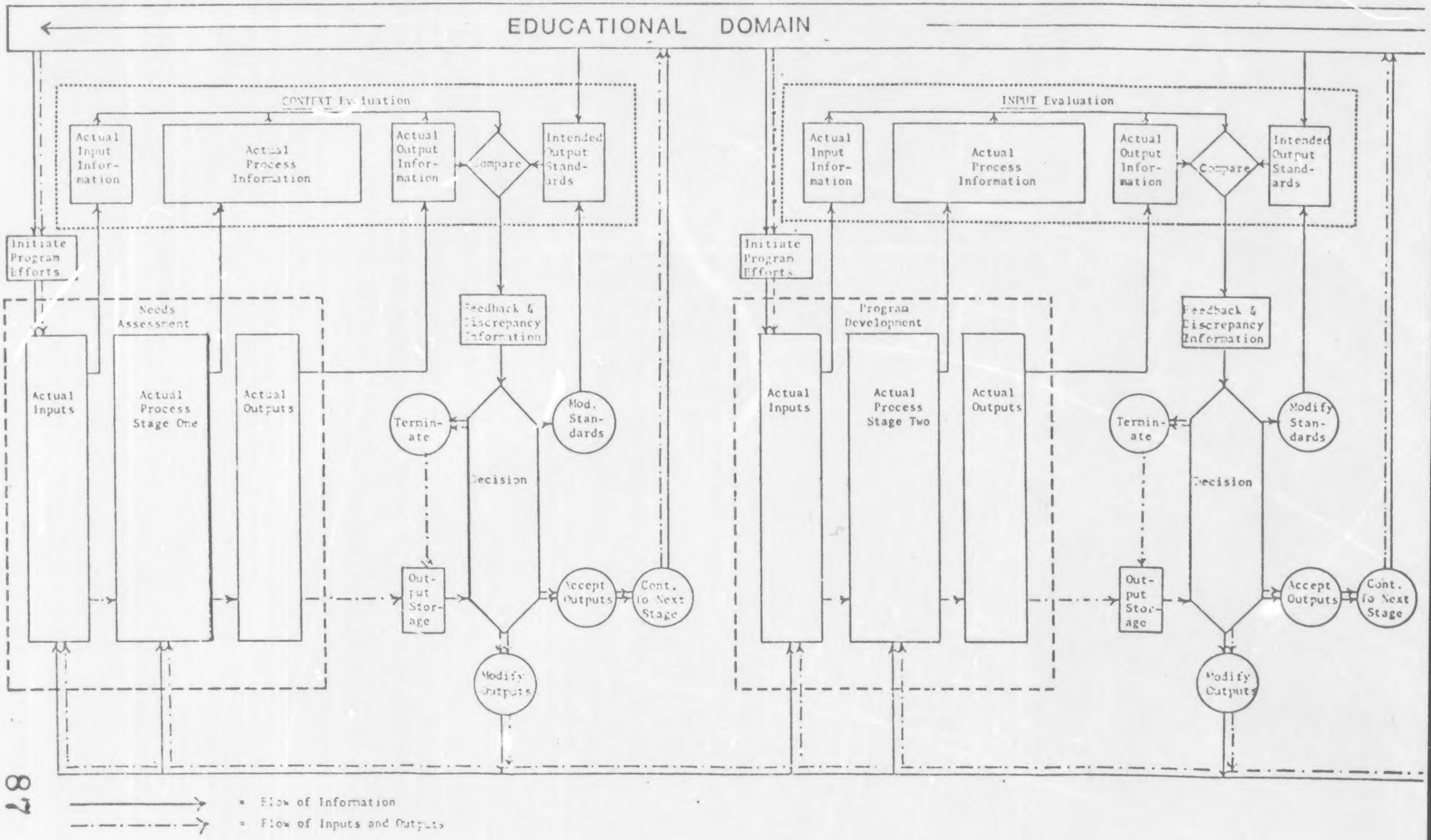
FIGURE

THE TOTAL EVA


EDUCATIONAL DOMAIN
CONTEXT Evaluation
Actual Input Information
Actual Process Information
Actual Output Information
Compare
Intended Output Standards
Initiate Program Efforts
Needs Assessment
Actual Inputs
Actual Process Stage One
Actual Outputs
Feedback & Discrepancy Information
Terminate
Decision
Mod. Standards
Output Storage
Accept Outputs
Cont. to Next Stage
Modify Outputs
INPUT Evaluation
Actual Input Information
Actual Process Information
Actual Output Information
Compare
Intended Output Standards
Initiate Program Efforts
Program Development
Actual Inputs
Actual Process Stage Two
Actual Outputs
Feedback & Discrepancy Information
Terminate
Decision
Modify Standards
Output Storage
Accept Outputs
Cont. to Next Stage
Modify Outputs
= Flow of Information
= Flow of Inputs and Outputs

FIGURE

THE TOTAL EVA


EDUCATIONAL DOMAIN
CONTEXT Evaluation
Actual Input Information
Actual Process Information
Actual Output Information
Compare
Intended Output Standards
Initiate Program Efforts
Needs Assessment
Actual Inputs
Actual Process Stage One
Actual Outputs
Feedback & Discrepancy Information
Terminate
Decision
Mod. Standards
Output Storage
Accept Outputs
Cont. to Next Stage
Modify Outputs
INPUT Evaluation
Actual Input Information
Actual Process Information
Actual Output Information
Compare
Intended Output Standards
Initiate Program Efforts
Program Development
Actual Inputs
Actual Process Stage Two
Actual Outputs
Feedback & Discrepancy Information
Terminate
Decision
Modify Standards
Output Storage
Accept Outputs
Cont. to Next Stage
Modify Outputs
= Flow of Information
= Flow of Inputs and Outputs

of program improvement that was illustrated in Figure XI (p. III-17). There are four features of the total evaluation system which can now be seen in the model shown in Figure XIV (p. III-25). These four features are as follows:

1. The final stage of the full cycle of program improvement is the only stage that eventually faces the decision of whether or not to continue the career education project by re-cycling the entire program of improvement.

2. The flow of inputs, outputs, and information is not only derived from the educational domain during each stage of program improvement, but is also eventually returned to the educational domain for further use after each stage of program improvement and corresponding stage of evaluation is completed.

3. Each stage of program improvement has the decision capabilities of either:

   a. modifying the context criteria of intended output standards, or

   b. modifying actual outputs by re-cycling them to any of the stages of program improvement that precedes the re-cycling decision.

4. The process of evaluation begins at the earliest possible time of program development and persists throughout all consequent phases to offer continuous opportunities for constant program improvement of career education.

Tasks and Considerations Involved in Developing and Administering the Evaluation Design

This section of Chapter III is devoted to suggesting various tasks and considerations that will be necessary in further developing the evaluation system just presented. In order for the evaluation system to be operationally functional, there has to be defined specific tasks and considerations that are needed for its implementation. Different programs require a different series of tasks and considerations for their evaluation for the same reason that different programs have different needs and objectives. It is not the intent of this section to suggest specific tasks and considerations that would be uniquely suitable to all career education programs. Such a venture is beyond the mission of this paper. However, in an effort to make the previous evaluation design operational without over-generalizing, the following sub-sections are offered: (1) Suggested Variables of Information Which May be Needed for the Four Stages of Evaluation, (2) Suggested Methods and Instruments Which May be Useful in Collecting Information, (3) Suggested Methods Which May be Useful in Analyzing and Treating Information, (4) Suggested Procedures and Formats Which May be Used to Functionally Feedback the Results of Evaluation,and (5) Suggested Criteria Which May be Useful in Assessing the Adequacy of Evaluation.

As was alluded to earlier, the tasks and considerations listed within these sub-sections are only offered as suggestions or alternatives and should not be considered either exclusively or inclusively applicable for the implementation of all program evaluations. For additional information pertaining to suggested tasks and considerations in conducting evaluations, it is recommended that the reader refer to Appendices E and F. Appendix E contains a detailed, sequential taxonomy of evaluator tasks and proposes an equally detailed sequential list of specialist roles in evaluation. These evaluator tasks and specialist roles were developed by Owens (1973, pp. 73-79). In presenting the taxonomies, Owens was careful to point out that his roles and tasks were "proposed as illustrative types" and that the appropriate use of the roles and tasks will vary from one setting to another, depending on such factors as size, budget limitations, caliber of existing specialist, types of evaluations to be performed,and the organized structure of the school district.

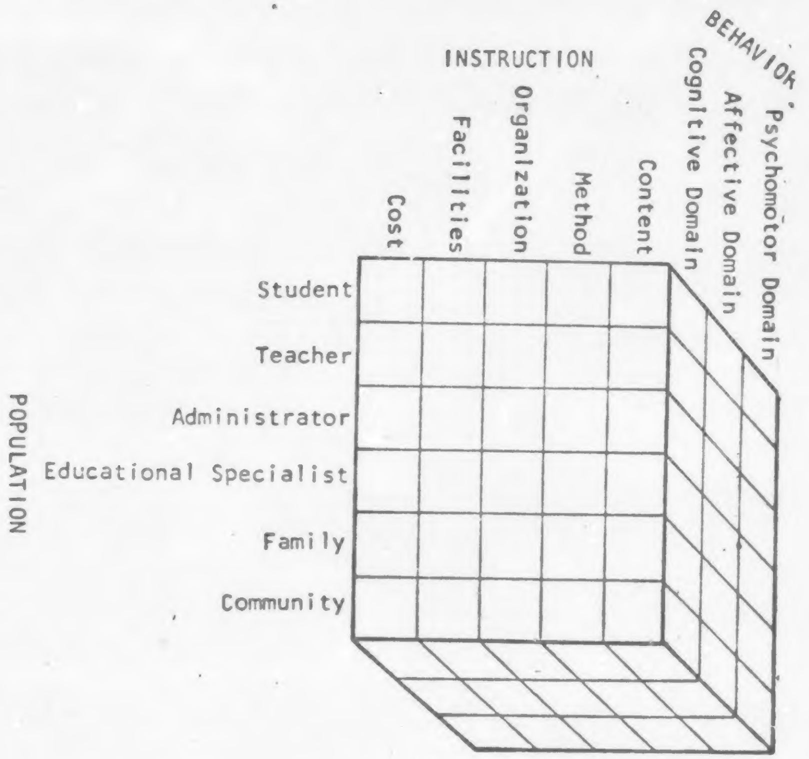
Appendix F contains a "Table of Contents Based on a Work Breakdown of Evaluation Tasks and Activities." This table of contents, developed by Stufflebeam (et al, 1971, pp. 203-205), also sequentially lists tasks and considerations which may be used in conducting program evaluations. Detailed descriptions of these tasks and activities may be found by referring to pp. 139-213 in Stufflebeam's book, Educational Evaluation and Decision-Making (refer to list of references).

Suggested Variables of Information Which May be Needed for the Four Stages of Evaluation

To provide information necessary for decision-making, "the evaluator needs to work within a framework that offers a wide range of potentially relevant variables" (Stufflebeam, et al, 1971, p. 241). To meet such "specifications," Stufflebeam (et al, 1971, p. 242) recommends the EPIC Evaluation Model (developed at the EPIC Evaluation Center in Tucson, Arizona) as a "most useful heuristic device to reveal combinations of variables leading to a more complete description and analysis of the instructional program." As illustrated in Figure XV (p. III-29), the EPIC Evaluation Model consists of three major sets of variables, which are further divided along three dimensions into 14 basic sub-sets. "In considering the dimensions, analysis of variables is limited only by the nature and scope of the program and the desire for simple or complex analysis" (Stufflebeam, et al, 1971, p. 242). By measuring the results of interaction among the variables, "A description of the forces affecting program results is produced. . ." (Stufflebeam, et al, p. 242). For further assistance in the classification of the behavioral dimension, the taxomonies developed by Bloom (1958), Krathwohl (et al, 1964), and Simpson (1967) are recommended.

Figure XV

The EPIC Evaluation Model


INSTRUCTION
BEHAVIOR
Cost
Facilities
Organization
Method
Content
Cognitive Domain
Affective Domain
Psychomotor Domain
Student
Teacher
Administrator
Educational Specialist
Family
Community
POPULATION

As Stufflebeam (et al, 1971, p. 244) will attest, the evaluation model designed at the EPIC Center can serve as a useful "starting point" for variable classification, however, "it must still be adapted to the needs of individual institutions." In an attempt to closer adapt the evaluation system that was earlier presented in the paper to the needs of career education programs, the following lists of major variables and general decision areas were identified. These lists will be separated and presented according to the appropriate state of program improvement for which they are designed to serve.

I. Needs Assessment Variables. With the help of Stufflebeam (et al, 1971, pp. 81, 218-222), the following list of questions were identified. These questions serve as examples of information which may be needed during the process of context evaluation.

   A. What are the boundaries of the educational domain?

   B. Who are the decision-makers to be served?

   C. What are the actual present conditions and characteristics of the educational domain?

   D. What are the conditions that are considered ideal for effective implementation of career education (as determined by the decision-makers of the educational domain)?

   E. What are the unmet career education needs of the educational domain (as determined by identifying discrepancies between actual and ideal conditions)?*

   F. What are the barriers causing the needs from being met?

   G. What are the values, attitudes, and priorities of the decision-makers of the educational domain?

   H. Do the decision-makers want the unmet career education needs to be met?

   I. If so, then how many of the unmet career education needs are the decision-makers willing to meet and to what extent do they want to meet them?

---

* Refer to pages III-20 and III-21 for a more detailed list of variables exemplifying and categorizing types of discrepancy information which may indicate that career education needs are not being met.

1. What are the specific objectives (including their priorities) of the career education program going to be for the future?

2. What specific behaviors do the decision-makers want students to exhibit after their exposure to the career education program?

II. Program Development Variables. Stufflebeam (et al, 1971, p. 233) suggests areas of information that are needed by providing the following examples of general questions that could be asked during input evaluation:

A. How familiar are all staff and community members, who are to be involved in the program, with the behavioral objectives and general program as delineated in the needs assessment?

B. Are the given objectives stated operationally and is their accomplishment feasible?

C. What strategies already exist with potential relevance for meeting the established objectives?

D. How can alternative strategies be generated?

E. What are the potential goals and benefits of each of several competing strategies?

F. What are the operating characteristics and effects of competing strategies under pilot conditions?

G. Is it logical to believe that a given strategy can accomplish the specified objectives?

H. Has this kind of plan worked in the past?

I. Is the particular strategy based upon valid theoretical principles?

J. What are its underlying assumptions and can they be met?

K. Is it legal?

L. Will it be rejected on moral grounds?

M. How much training will the staff require before they can effectively implement a given plan? (Once trained, how effective were the various forms of in-service training?)

N. Can a given strategy be translated into an efficient procedural plan?

O. What specific procedures will be needed to implement a given strategy?

P. How can existing staff and facilities best be utilized in the implementation of a new strategy?

Q. What specific schedule of events, resources, and activities can best guide the strategy's implementation?

R. What side effects might a particular strategy produce?

S. What are the attitudes of students, parents, teachers, etc., toward a particular strategy and what do they know about it?

T. How should a particular strategy be administered, evaluated, and reviewed at various levels?

U. What process and product evaluation designs are required for efficient and effective strategy implementation?

V. Following a pilot test, how feasible is strategy institutionalization?

According to Stufflebeam (1973, p. 22), alternative procedural decisions for input evaluation can be assessed with the following variables in mind:

1. Their resource (capability and availability in meeting the situation), time, and budget requirements.
2. Their potential procedural barriers.
3. The consequences of not overcoming these barriers.
4. The possibilities and costs of overcoming them.
5. Relevance of the designs to program objectives.
6. Overall potential of the design to meet program goals.

III. Program Implementation Variables. The following questions, derived from Stufflebeam (et al, 1971, pp. 83 and 230), serve as general suggestions of information needed in process evaluation:

A. Are the interpersonal relationships among staff members and between staff and students conducive with the program efforts?

B. Are communication channels among staff members and between staff and students conducive with the program efforts?

C. Were there any misunderstandings of an agreement with the intent of the program by persons involved in and affected by it?

D. Were the resources, physical facilities, staff, and time schedule adequate as was calculated? (i.e., How well did they work in bringing about the desired outcomes?)

E. To what extent has the intended plan of action been carried out?

F. Should the staff be re-trained?

G. Should new procedures be instituted?

H. Should additional resources be sought?

I. Should responsibilities be reassigned to staff?

J. Should the schedule be modified?

IV. Outcomes Assessment Variables. The following list of questions, obtained directly from Stufflebeam (et al, 1971, p. 84) suggest the general decision areas or variable types of information that may be considered during product evaluation:

A. Are the student's needs being met?

B. Are we solving the problems as intended? (i.e., To what extent have the desired outcomes been achieved?)*

C. Is the project failing?

D. Was the product worth the investment?

E. Has there been a significant gain in pupil achievement?

F. Have we benefited by using the opportunity that was presented to us?

G. Has sufficient progress been achieved to warrant continuation of the project?

H. Is the new project succeeding?

I. Were the results from project A better than those from project B?

J. How effective and efficient were the processes occurring throughout all previous phases?

K. Are there any positive and/or negative by-products? e.g.:

1. Has the project resulted in improved teaching competence?

---

* Again refer to the list of variables that may be used to describe unmet career education needs located on p. III-20 and III-21. The information concerning these variables can be used as both pre-test measures (gathered during context evaluation) and post-test measures (gathered during product evaluation).

2. Have school-community relations been improved?
3. Have students improved their self-concepts?

Information pertaining to specific criterion measures for outcomes assessment may be found by referring to Appendix J, Multiple Criterion Measures for Evaluation of School Programs, by Metfessel and Michael (1967, pp. 27, 931-943).

Suggested Methods and Instruments Which May be Used in Collecting Information.

This portion of Chapter III will be divided into two major parts: (1) Methods of Collecting Information and (2) Instruments for Collecting Information.

Methods of Collecting Information. This major part will be sub-divided and presented in the following order: (1) Suggested Research Designs, (2) Suggested Types of Measurement Devices, and (3) Suggested Data Collection Methods and Techniques (this third sub-division will be presented and separated according to each of the four stages of evaluation that they are appropriate for).

Suggested Research Designs. According to Gilrain (1973, pp. 18 and 19), the three research designs most often used in recent evaluation studies are: (1) Experimental vs. Control group post-test only, (2) Experimental vs. Control group, pre- and post-test, and (3) Solomon Four Group Design (note Appendix G). Out of these three, Gilrain (1973, p. 19) states that

> "The strongest designs for the measurement of vocational maturity variables as they are affected by career education projects are: (1) the Experimental vs. Control pre- and post-test employed by Bovee (1967), Corey (1969), Goodson (1969), Guerriero (1967),

> Jalkanerr (1970), Schnieding and Jensen (1968), Shirts (1966), Stevenson (1971), Williams (1967) and (2) the Solomon Four Group Design employed by Asbury (1968) and Jackson (1971)."

In making some distinctions between these two research designs, Gilrain further asserted that even though the Experimental vs. Control pre- and post-test is not as complex as the Solomon Four Group Design, it should still suffice most research design requirements. One distinct advantage, however, that the Solomon Four Group Design has over the Experimental vs. Control pre- and post-test is that it has the ability to distinguish the effect of pre-testing.

The Experimental vs. Control pre- and post-test involves the use of an experimental group (the group which is subjected to special project treatment) and a control group (the group which is not subjected to the same special project treatment). Before the Experimental group is exposed to treatment, both groups are administered identical pre-tests, preferably under identical situations. Then, following the experimental treatment, each group is administered the same instrument as a post-test at which time gains analysis is performed to determine whether or not any significant change differences in subject growth between the two groups resulted.

According to Gilrain (1973, p. 19), the subjects for such groups are not usually random samples, but are rather "naturally assembled collectives," such as students of the same elementary class or students of different grade levels, such as grade seven through twelve, who are exposed to the same teacher of a specific subject matter.

The use of a control group seems to be a necessary element in the process of evaluation. Its purpose as a discriminating factor in distinguishing gains due to natural maturation, as opposed to gains attributable to the experimental effect of career education increases the validity of evaluation results. Gilrain (1973, p. 24) testifies to this concept in the following statement:

> "The use of a control group seems imperative. It is my experience that both the control and experimental groups make significant gains as a normal maturation process and the only way to measure the effect of the Career Education project is to compare experimental gains to control gains."

In support of the research that Gilrain has provided thus far, Crites (1969, p. 85) offers the following features which he feels are essential for "The ideal experimental design for research on the facilitation of vocational attitude maturity":

1. Unrestricted range on the dependent variable.
2. S's sampled from the same population or stratified on relevant control variables.
3. Solomon Four Group Design to assess effects of pre-testing.
4. "Gains" analysis of differences between pre- and post-test scores.
5. A relevant, potent, operationally defined independent variable (career education) to which only the experimental group is exposed.

For more information that: (1) further describes the research designs just presented and (2) describes additional research designs that may be useful in collecting information, refer to Appendix G. Appendix G was adopted from Dalen and Meyer (1966) by Isaac and Michael (1971) and contains the following eleven examples of research designs: (1) A "Poor" Research Design (No Control): The "One-Shot Case Study," (2) Minimal Control: One-Group Pre-Test-Post-Test Design, (3) Randomized Control - Group Pre-Test-Post-Test Design, (4) Randomized Solomon Four-Group Design, (5) Randomized, Control-Group Pre-Test-Post-Test Design, (6) Non-Randomized

Control-Group Pre-Test-Post-Test Design, (7) Counterbalanced Design, (8) One-Group Time-Series Design, (9) Control-Group Time-Series Design, (10) The 2 x 2 Factorial Design, and (11) Extended Factorial Designs.

Suggested Types of Measurement Devices and Criterion Measures. According to Gilrain (1973, p. 4 and Westbrook, 1971), the three most commonly used devices and instruments to measure variables of vocational maturity are:

> "(1) the partially structured interview used in Super's Career Pattern Study (Super et al, 1960); (2) the completely structured interview used in the Career Development Study (Gribbons and Lohnes, 1968) to measure Readiness for Vocational Planning (RVP); (3) the fixed alternative procedure used by Crites (1966) in his 50 true-false questionnaire, entitled Vocational Development Inventory (VDI)."

As implied by the name, the partially structured interview consists of non-predetermined questions and answers. One disadvantage of this type of instrument is that the analysis of data is quite complex due to the fact that the interview format is non-standardized or non-comparable. The structured interview, on the other hand, does have pre-determined questions and a pre-determined order of presentation. Therefore, the answers of all subjects can be compared to each other and are somewhat easier to analyze. The nature of the fixed alternative choice limits the subjects to the choice of stated alternatives and, consequently, eliminates the possible error of variance caused by score differences in evaluating responses. In comparing the fixed alternative choice to either of the two types of interview instruments, it would be safe to say that the fixed alternative choice instrument has the advantage of being less difficult and less expensive to analyze than the free responses of the interview instruments (Westbrook, 1971, p. 10).

It should be mentioned, however, that both the partially structured and the structured interviews have the distinct advantage of gathering free open-ended information and, therefore, offer opportunities for the examinee to express a wider and, perhaps, more inclusive range of information which is not always available from forced-choice instruments.

In summing up the three approaches, Westbrook and Cunningham (1970, pp. 18 and 171-175) have the following comments:

> "Interview approaches to measuring vocational maturity have distinct disadvantages which limit their usefulness and applicability. Collecting the data is time-consuming and scoring requires a great deal of time from highly qualified personnel. Tests and inventories appear to be more appropriate for measuring the cognitive and affective aspects of vocational maturity because they are more objective, more economical, can be administered to large samples and yield more precise measurements."

Based on a detailed review of literature (Crites, 1966; Bathory, 1967; Dutt, 1968; Drahozal, 1965; Crites, 1969; Harlan, 1964; Holloway, 1967; Asbury, 1968; Cooter, 1966; Maynard, 1970; McCrystal, 1967; Miller, 1968; Meyers, 1966; Wilstach, 1967; Bovee, 1967; Gilliland, 1966; Goodson, 1969; Guerriero, 1967; Jackson, 1971; Schnieding and Jensen, 1968; Shirts, 1966; Stevenson, 1971; Williams, 1967; Westbrook and Cunningham, 1970; Norton, 1970; Corey, 1969; Vriend, 1969; Gerstein and Hoover, 1969; Isaac, 1969; Jeppesen, 1971; McCormick, 1969; McSherry and O'Hara, 1966; Schlesser, 1971; Rollings, 1967; Sturges, 1969; Super, et al, 1971; Westbrook, 1971; Wilson, 1969; Zikmund, 1971; Bradly, 1970; Jackson, 1969; Hansen, 1967; Jalkner, 1970 and others) containing research and analysis of instruments used to measure the appropriate vocational maturity variables earlier mentioned, Gilrain (1973, p. 12) came to the following conclusion:

> ". . .the instrument most frequently used to measure vocational maturity attitude is Crites' VDI. The instruments most frequently

used to measure the acquisition of self-knowledge, occupational information, vocational planning, and decision-making are multiple choice tests, Likert scale inventories, job list recall, and essay questions."

Most of the types of instruments summarized by Gilrain can be machine-scored, except for the job list and essay question. The job list seems to lend itself to hand-scoring quite readily and is supposed to discriminate well between experimental and control groups, as well as between pre- and post-testing results. One disadvantage is that the job list is based on the questionable assumption that the acquisition of knowledge of occupational information can be inferred from a list of occupational titles. In referring to the use of essay questions on career planning, Gilrain did not recommend its use for the reasons that such compositions are expensive and difficult to grade. (Gilrain, 1973, pp. 12 and 13).

For additional information concerning measuring devices and criterion measures, refer to Appendix J. This Appendix consists of a detailed list of "Multiple Criterion Measures for Evaluation of School Programs," as developed by Metfessel and Michael (1967, pp. 27, 931-943). These multiple criterion measures are grouped according to the following five categories: (1) indicators of status or change in cognitive and affective behaviors of students in terms of standardized measures and scales, (2) indicators of status or change in cognitive and affective behaviors of students by informal or semi-formal teacher-made instruments or devices, (3) indicators of status or change in student behavior other than those measured by tests, inventories, and observation scales in relation to the task of evaluating objectives of school programs, (4) indicators of status or change in cognitive and affective behaviors of teachers and other school personnel in relation to the evaluation of school programs, and (5) indicators of community behaviors in relation to the evaluation of school programs.

Suggested Data Collection Methods and Techniques. This sub-division consists of data collection methods and techniques which may be used specifically for each of the four stages of evaluation earlier presented, i.e., the methods and techniques will be presented and separated according to each of the four stages of evaluation for which they are appropriate.

Context Evaluation. Stufflebeam (et al, 1971, p. 221) suggests the following systems analysis techniques for use in context evaluation in describing the nature of the educational domain to be served:

1. Program Evaluation and Review Technique.
2. Action Systems Model (devised by Parsell, 1966).
3. System of Instructional Variables (developed by Hammon, 1967 and 1968).

He also recommended the following general types of sources to help determine major unmet needs and unused opportunities:

1. Sample survey and opinionnaire techniques.
2. Experts' and actors' conferences (actors' conferences refer to conferences of persons who are representative of those who operate within a defined context, while experts' conferences refer to conferences of persons who have specialized knowledge of a defined context).
3. Standardized tests.
4. Attitude scales.
5. Diagnostic surveys.
6. School profiles.
7. Study visits to other systems.
8. Surveys of research literature.

9. Visitation by teams of experts.
10. Continuing study of funding opportunities.

Input Evaluation. Even though "techniques for input evaluation are lacking," Stufflebeam (et al, 1971, pp. 228 and 229) suggests the following methods and sources of collecting information:

1. Committee deliberations.
2. Appeals to the professional literature and employment of consultants.
3. Gage's (1963) Handbook of Research on Teaching (refer to the Campbell-Stanley chapter) for selecting the experimental design.
4. The Program Planning and Budgeting System.
5. The Delphi Technique.
6. The Convergence Technique.
7. Cost/effectiveness analysis.
8. The PERT Technique (as validated for use in education by Cook, 1966).

Process Evaluation. The techniques for collecting the needed information for this stage of program evaluation as suggested by Stufflebeam (et al, 1971, p. 231) are:

1. Interaction analysis.
2. Open-end end-of-the-day reaction sheets.
3. Interviews.
4. Rating scales.
5. Diaries kept by project personnel.
6. Semantic differential instruments.
7. Records of staff meetings.
8. Up-dated PERT networks.
9. Suggestion boxes.

Product Evaluation. According to Stufflebeam (1971, pp. 234 and 235), "Traditionally, experimental design has been the recommended strategy for conducting product types of evaluation." This method, which utilizes pre- and post-test measuring devices, is valid, however, only when ample care is exercised in assigning experimental and control groups randomly. Descriptions of the experimental and other research designs, including the precautions that are considered necessary for their validity, were earlier presented on pages III-34 to III-37 of this chapter.

Instruments for Collecting Information. Most of the content for this section will be presented in Appendices C, D, H and I.

Suggested Commercial Tests Available from Major Test Publishers. Appendix C contains a descriptive list of suggested evaluation instruments (complete with source information) which may be useful in collecting information for school-based career education programs. This list was developed by compositing commercial tests available from over nine major test publishers. Appendix C includes only student instruments which are arranged in chronological order, according to various grade levels. Each of the tests have also been classified according to the type of variable measured. The format for the Appendix provides columns in which each instrument can be further classified, by the individual decision-maker, in terms of the stage of evaluation for which they may be appropriate. The stage for which each instrument is appropriate is variably dependent upon the specific nature, needs and limitations of the program in which they are to be used, e.g., for some programs, many of the tests will be utilized as pre- and post-test instruments during context and product evaluations; for other programs, many of the instruments will only be used as post-test measures, due to such limitations as shortage of funds and inappropriateness, in terms of the stage that the program was in before evaluation began (some programs do not begin evaluation activities until they have advanced to the product stage of evaluation which, consequently, prevents any possibilities for pre-testing).

Suggested Tests Extracted from a Variety of Career Education Handbooks, Guides, and Project Reports. Appendix D contains a list of instruments that were extracted from a variety of career education handbooks, guides, and project reports. It is similar to Appendix C, except that it also includes instruments which may be used to measure variables pertaining to teachers, counselors, school psychologists, local vocational education coordinators (LVEC), administrators, and parents and community members. Information pertaining to such educational facilitators as these becomes especially relevant during the input and process stages of evaluation. However, due to the interdependency of the four stages of evaluation, such information is not exclusively important to only the input and process stages. As was earlier mentioned, the stage for which each type of instrument is appropriate is variably dependent upon the specific nature, needs, and limitations of the program in which they are to be used.

Appendices H and I, respectively, contain: (1) a "List of Test Publishers and Distributors" and (2) a list of sources containing information on tests, measurement and data analysis.

For more information concerning specific instruments that are most commonly used in measuring student growth as it is affected by career education, refer to the preceding section of this chapter, titled "Suggested Types of Measurement Devices and Criterion Measures" (pp. III-37 to III-40).

Suggested Methods Which May be Useful in Analyzing and Treating Information

In regard to statistical analysis, Gilrain (1973, pp. 26 and 27) suggests that the following statistical techniques of vocational maturity measurement be considered: . . .means, standard deviations, t-test for independent groups, t-test for correlated groups, analysis of variance, and analysis of co-variance using pre-test as the co-variant. Gilrain further elaborated by indicating that pre-treatment differences between the experimental and control groups may be described by the methods of means, standard deviations, and t-test for independent groups and overall F. The statistics of these methods will also describe differences between grade level, track, curriculum or school. In addition, he also suggested that the use of "the t-test for correlated groups and the analysis of co-variance will determine the significance of gain resulting from the treatment" (Gilrain, 1973, p. 27).

Throughout the professional literature, there exists numerous sources that are more than qualified to provide suggestions for the treatment and analysis of collected information, e.g., Turney and Robb (1971, pp. 71-104) do an excellent job of presenting, in a rather concise and understandable form, methods for analysis and treatment of data. For additional information concerning methods which may be used in the treatment and analysis of data, refer to Appendix I, "Sources of Information on Tests, Measurement, and Data Analysis."

Suggested Procedures and Formats Which May be Used to Functionally Feedback the Results of Evaluation

The process of providing feedback is concerned with taking the results of evaluation and placing them in a functional form that will maximize the efforts of decision-makers, evaluators, and program implementors in their attempts at providing program improvement.

Not only does every phase of a program have to be evaluated, but a feedback system also has to be developed for reporting the variables that are relevant to the progress and effectiveness of each phase, i.e., because evaluation is a continuous process, so is the process of providing feedback information.

The nature of the target audience which is to receive feedback reports must be taken into close consideration when designing feedback procedures and formats. Selection of such feedback factors as timing, frequency, language (jargon), content, media, and format should be dictated by the particular needs and peculiarities of the audience to be reached and informed. Therefore, in order to communicate information effectively, feedback information must be reported on a level of sophistication that is commensurate with the audience's level of understanding.

There are available, many different styles for reporting information. Figure XVI (p. III-46) developed by Stufflebeam, 1971, p. 206) illustrates this by offering suggestions for using media in reporting information. Figure XVI specifically takes into account the relationship between such factors as: (1) audience, (2) organization, and (3) the means of communication used - oral and written. As Stufflebeam (1971, p. 206) suggests, "The diverse needs of the audiences and the complexities of the information to be reported will require the use of all potentially helpful methods of communication." In

Figure XVI

Media Suggestions for Use in Reporting by Relationship of the Audience to the Organization and Means of Communication Used

	Internal	External
Oral	Reports to committees One-to-one feedback ·Face-to-face ·Telephone Professional staff meetings ·Television ·Radio	Television reports Radio reports Newspaper interviews Speeches ·Civic groups ·State Department ·Professional meetings ·P.T.A. Reports to the public via Board of Education meetings
Written	Requested evaluation reports *Ad hoc* project evaluation reports: Interim and final Office bulletins and memoranda Position papers Required system reports	Mandated Federal-State reports Public reports Pupil profile School profile School newsletters, bulletins Press releases Occasional papers Professional publications Reports for demonstration to other local education agencies

addition, Stufflebeam (1971, pp. 205 and 206) further suggests that regardless of who the audience is, "Graphic presentations should be included to facilitate understanding of data and information, especially in public documents."

For suggestions pertaining to alternative types of formats that may be used to organize and present the results of evaluation, refer to Appendices F and K. Together, these appendices illustrate ten different tables of content, most of which were taken from actual third party evaluations. The table of contents illustrated in Appendix F, developed by Stufflebeam (1971, pp. 200-205) was based on a work breakdown of evaluation tasks and, therefore, does not allow for a section providing the results of the evaluation. Consequently, Stufflebeam (1971, p. 205) has suggested that the following type of sections be added to the outline:

4. Evaluation Results (concerning decisions to be made)
    - 4.1 Question to be answered
        - 4.11 Evidence
        - 4.12 Interpretation of evidence by decision rules
    - 4.2 Question to be answered
        - 4.21 Evidence
        - 4.22 Interpretation of evidence by decision rules
    - 4.3 . . . .
        - . . . .
        - . . . .
5. Summary of Evaluation (based on one or more of the following questions):
    - 5.1 What are the needs and priorities to be met?

5.2 What are the alternatives for meeting these needs and priorities and their relative potential for reducing needs?

5.3 Was the program which was implemented congruent to the planned program?

    5.31 In what ways did it differ?

    5.32 Why?

    5.33 What facilitants and restraints were encountered?

5.4 How well did the program meet the needs for which it was identified?

Suggested Criteria Which May be Useful in Assessing the Adequacy of Evaluation

This section is devoted to two questions: (1) how does one evaluate an evaluation and (2) to what criteria must an evaluation conform, in order to be functionally effective? One way of evaluating an evaluation is to assess it in terms of the information it provides. This method is based on the assumption that an evaluation which provides effective information is an effective evaluation.

Using the effectiveness of information as a basis or significant factor for assessing evaluation, Stufflebeam (1971, pp. 27-32) has proposed a viable answer to question number two just listed. The criteria that he feels are appropriate for evaluating the evaluation are as follows.

Scientific Criteria

Internal Validity

Internal validity refers to how close the relationship is between the collected information and the actual phenomena it is supposed to represent. (Stufflebeam, et al, 1971, p. 27)

External Validity

External validity refers to how representative the information is. It pertains to whether or not the collected information can be applied or generalized to larger groups or populations.(Stufflebeam, et al, 1971, pp. 27-28)

Reliability

Reliability refers to how consistent the information would be if it were collected repeatedly, using the same methods and instruments.(Stufflebeam, et al, 1971, p. 28)

Objectivity

Does the evaluation system allow for the handling and treatment of all variables in a manner which is independent of personal reflections or feelings? (Stufflebeam, et al, 1971, p. 28)

Practical Criteria

Relevance

This criterion concerns itself with "whether or not the purposes are in fact, served."(Stufflebeam, et al, 1971, p. 28)

Importance

This criterion is somewhat self-explanatory. Because evaluation is concerned with collecting information, there must be criterion to decide, for the sake of brevity and conciseness, what is to be reported. Importance is then used as a criterion to separate significant and relevant information from that which is insignificant and irrelevant.(Stufflebeam, et al, 1971, p. 29)

Scope

This pertains to the judgmental criterion of deciding the "range of information" which is to be supplied, e.g., the extent in which the various types of information are needed. (Stufflebeam, et al, 1971, p. 29)

Credibility

This "relates to the quality of trust or belief" in the evaluation design, the evaluation information and the evaluator. (Stufflebeam, et al, 1971, p. 29)

Timeliness

This refers to whether or not the information obtained from the evaluation is reported when it is needed and useful . . . on time. (Stufflebeam, et al, 1971, p. 29)

Pervasiveness

This criterion refers to whether or not the findings of the evaluation were reported to and used by all persons who need to use and know about them. (Stufflebeam, et al, 1971, p. 30)

Prudential Criterion

Efficiency

Efficiency refers to the extent to which all evaluative operations were carried out in terms of appropriate and thrifty use of time, cost and personnel. (Stufflebeam, et al, 1971, p. 30)

References

Alkin, Marvin C. "Products for Improving Educational Evaluation," UCLA Evaluation Comment, Vol. 2, No. 3, Fifth Annual Report to the U.S. Office of Education, University of California, Center for the Study of Evaluation, September, 1970.

Arizona State Advisory Board for Vocational Education, Career Education in Arizona. The 3R's Plus Career Education, ERIC ED 063-470, 1972.

Asbury, F. An Experimental Study of Guidance Treatments to Accelerate Vocational Development in Eight Grade Males in Appalachia. Doctoral Dissertation, University of Kentucky, 1968.

Ash, Lane C., et al., "Instruments and Procedures for the Evaluation of VTE Institutions and Programs", U.S. Dept. of Health, Education, and Welfare, December, 1971.

Bailey, Larry J. A Curriculum Model for Facilitating Career Development, ERIC ED 060-198, March 1971.

Bathory, M. J. Occupational Aspirations and Vocational Maturity. Paper presented at the meeting of the American Vocational Association, Cleveland, December, 1967.

Bloom, B.S., et al. A Taxonomy of Educational Objectives: Handbook I, The Cognitive Domain, New York: David McKay Co., Inc.

Bottoms, Gene. Career Development Education K Through Post-Secondary and Adult Education, ERIC 062-580, (No date listed).

Bottoms, James E., et al., Career Education Resource Guide, Career Programs, New Jersey, General Learning Corporation, 1972.

Bovee, C. C. A Study of the Preparation Phase of the Presbyterian Guidance Program in the Synod of Georgia. Doctoral Dissertation, University of Georgia, 1967.

Boykin, William C. Occupational and Educational Orientations of Negro Male High School Seniors in the Mississippi Delta (Final report of USDHEW Office of Education Grant No. OEG-4-8-070065-0004-057, Project No. 7-D-065, Alcorn Agricultural and Mechanical College, Lorman, Mississippi, September, 1968).

Bradly, R. L. An Examination of Selected Variables Affecting the Vocational Development of Elementary School Children. Doctoral Dissertation, Texas A & M University, 1970.

Caldwell, Michael S. "An Approach to the Assessment of Educational Planning," Educational Technology Reviews Series No. 11- Evaluation of Education, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Campbell, Robert E., "Vocational Guidance in Secondary Education: Selected Findings of a National Survey Which Have Implications for State

Program Development." Paper presented at the National Conference on Vocational Guidance: Development of State Programs, U.S. Office of Education, Washington, D. C., January 16-18, 1968.

Campbell, D. T., and Stanley, J. C., Experimental and Quasi-Experimental Designs for Research, Rand McNally and Company, Chicago, 1966.

Cook, Desmond L. Program Evaluation and Review Technique Applications in Education. Washington, D.C.: U.S. Government Printing Office, 1966.

Cooter, R. D. Occupational Level Preferences Among Adolescents. Unpublished manuscript, Swarthmore College, 1966.

Corey, J. A. The Relationship of Alienation from Society and Selected Variables to Vocational Maturity of High School Seniors. Doctoral Dissertation, University of Oregon, 1969.

Coster, John K. and Morgan, Robert L. The Role of Evaluation in the Decision Making Process, Occasional Paper No. 5, Center for Occupational Education, North Carolina State University at Raleigh, 1969.

Crites, J. O. Attitude Test of the Vocational Development Inventory. University of Iowa, 1966.

Crites, J. O. Vocational Psychology. New York, McGraw-Hill, 1969.

Cutlip, Scott, M. A Program to Achieve Public Understanding of Comprehensive Career Education, (A Pamphlet prepared for the Center for Vocational and Technical Education), Ohio State University, November, 1971.

DePetro, Henry, "Operation Bridge" - An Innovative, Comprehensive Vocational Education Program for Disadvantaged Youth, ED 062-549, Feb. 25, 1972.

Drahozal, E. G. A Study of Selected Characteristics of Senior High School Decision. Unpublished Doctoral Dissertation, University of Iowa, 1965.

Drier, Harry, et al., "An Orientation to Career Education", Preliminary Copy, The Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio, April, 1972a.

Drier, Harry N. Jr. K-12 Guide for Integrating Career Development into Local Curriculum, Wisconsin State Guide, Charles A. Jones Publishing Company, Worthington, Ohio, 1972b.

Dutt, K. Report of Preliminary Results on Vocational Readiness of Eighth and Ninth Grade Vocational-Technical Students. Unpublished manuscript, Lafayette College, 1968.

Eaddy, K. M. An Exemplary Model for a Total Ecological Approach to Non-Graded Vocational Programs in Separate Educational Centers, Final port, ERIC ED 060-193, November, 1971.

Eau Claire Public Schools, "Knowledge of: Self + World of Work = Career -A K-12 Career Development Guide", July, 1971.

Finn, James D., "Institutionalization of Evaluation", Education Technology Reviews Series No. 11 - Evaluation of Education, edited by D. L. Stufflebeam, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Freund, John E. and Williams, Frank J,, Dictionary/Outline of Basic Statistics, McGraw-Hill Book Co., New York, N.Y., St. Louis, etc., 1966.

Gage, N. L. (ed.) Handbook of Research on Teaching, Chicago: Rand McNally and Co., 1963.

Gerstein, M., & Hoover, D. The Evaluation of an Occupational Information Dissemination System for Use in Secondary Schools. Doctoral Dissertation, University of Southern California, 1969.

Gilliland, B. E. An Evaluation of the Effects of Small Group Counseling with Negro Adolescents. Doctoral Dissertation. University of Tennessee, 1966.

Gilrain, J. B. "Career Education 1973 - A Plan for Evaluating Student Growth". (A monograph which is part of a 1973 dissertation in the field of career education).

Goldhammer, Keith and Tayler, Robert E., Career Education: Perspective and Promise, Charles E. Merrill Publishing Co., Columbus, Ohio, 1972.

Goodson, W. D. A Study to Determine the Value of Vocational College Orientation Groups by Comparison of Various Approaches. Doctoral Dissertation, Brigham Young University, 1969.

Grant, Vance W. "Statistics of the Month," American Education, July - August, 1965, Back Cover.

Gribbons, W. D. & Lohnes, P. R. Emerging Careers: A Study of 111 adolescents. New York: Teachers College Press, 1968.

Griessman, Eugene B. "An Approach to Evaluating Comprehensive Social Projects", Educational Technology Reviews Series No. 11 - Evaluation of Education, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Guba, Egon G., "The Failure of Educational Evaluation", Education Technology Reviews Series No. 11 - Evaluation of Education, edited by D. L. Stufflebeam, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Guerriero. M. A. Improved Guidance Services in Selected Vocational Schools. Unpublished monograph. New York: The Center for Urban Education, 1967.

Hammond, Robert L. "Evaluation at the Local Level" (address to the Miller Committee for the National Study of ESEA Title III, 1967).

Hammond, Robert L.; Stufflebeam, Daniel L., and Guba, Egon G. "Planning and Implementing Title III Evaluation" (Division of State Agency Cooperation, U.S. Office of Education, 1968).

Hansen, J. *The Effects of Two Kinds of Counseling on the Realism of Vocational Choice of High School Boys.* Doctoral Dissertation. University of Colorado, 1967.

Harlan, G. E. A *Comparison of Differences in Selected Characteristics Among High School Seniors, College Freshmen, Trade School Students, Technical School Students, and Business School Students.* Doctoral Dissertation. University of Iowa, 1964.

Herr, Edwin L., "Unifying an Entire System of Education Around a Career Development Theme", *Career Education: Perspective and Promise,* edited by K. Goldhammer and R. E. Tayler, Columbus, Ohio, Charles E. Merrill Publishing Co., 1972.

Holloway, L. A. An In-Depth Study of the Cooperative Vocational Education Program, Champaign Central High School, Champaign, Illinois. Unpublished manuscript. University of Illinois. 1967.

Holstein, Herbert B., et al, *Career Education: A Curriculum Model and Strategies for Implementation*, ERIC ED 059 3 65, November, 1971.

Hoyt, Kenneth B., et al., *Career Education: What it is and How to Do it*, Olympus Publishing Co., Salt Lake City, Utah, 1972.

Isaac, S. *Career Simulation for Adolescent Pupils*. San Diego County Department of Education, California, 1969.

Isaac, Stephen and Michael, William B. *Handbook in Research and Evaluation*, First Ed., Robert R. Knapp, Publisher, San Diego, California, 1974.

Jackson, J. S., Jr. et al. Evaluation of the Career Development Laboratory, Sayre Junior High School, Philadelphia, Pennsylvania: Office of Research and Evaluation, Philadelphia School District, 1969.

Jackson, L. *The Effects of a Formal Program of Career Exploration on the Vocational Maturity of College Freshmen*. Doctoral Dissertation. University of Georgia, 1971.

Jalkanerr, A. A *Comparison of Vocational Attitudes and Job Aspirations of Urban and Suburban School Students*. Doctoral Dissertation. Wayne State University, 1970.

Jenkins, John D. A *Universe Model of Occupational Education for Pikeville, Kentucky in Conjunction with the Pikeville Model Cities Program*, ERIC 061 419, October 30, 1971.

Jeppesen, V. *The Effect of Pictorial Stimuli in the Introduction of Occupational Information to Elementary School Children.* Doctoral Dissertation. University of Oregon, 1971.

Keller, Louise J., *Career Education In-Service Training Guide*, Career Programs, Morristown, New Jersey, General Learning Corporation, 1972.

Kincaid, Harry V., principal invistigator, and Hamilton, Phyllis D. A *Preliminary Evaluation of Richmond Plan Programs (Pre-Technical Plan)* in Secondary Schools, Final Report, Standard Research Institute, Menlo Park, California, August 1, 1968.

Korizek, William A., The Next Step -- A Comprehensive Program in Occupational Preparation and Placement, ERIC ED 060 187, October, 1971.

Krathwoll, D. R., et al. Taxonomy of Educational Objectives. Handbook II: Affective Domain. New York: David McKay Co., Inc., 1964.

Kurtz, Albert K, and Edgerton, Harold A., Statistical Dictionary of Terms and Symbols, Hafner Publishing Co., New York and London, 1967.

Lakeshore Technical Institute., Sheboygan, Wisconsin, K-12 Career Education Guide, ERIC ED 161 429, July 12, 1971.

Lindquist, E. F. Design and Analysis of Experiments in Psychology and Education. Boston: Houghton-Mifflin, 1953.

Marland, S. P. Jr. "Career Education: More Than a Name", Career Education: Perspective and Promise, edited by K. Goldhammer and R. E. Tayler, Columbus, Ohio, Charles E. Merrill Publishing Co., 1972a.

Marland, S. P. Jr. Career Education: Three Speeches by the Commissioner, ERIC ED 062-527, 1971b.

Marland, S. P. Jr. "Voices From the Real World", Taken from speech presented before the Annual Conference of the Council of the Colleges of Arts and Sciences, Sheraton-Carlton Hotel, Washington D.C., Friday, November 10, 1972c.

Marland, S. P. Jr. Taken from speech given at 1971 convention of the National Association of Secondary School Principles, Houston, Texas, January, 1971d.

Marland, S. P. Jr. Taken from interview conducted by the editors of American Education, November, 1971e.

Maryland State Dept. of Education, Career Education: A Handbook for Implementation, ERIC ED 062 521, February, 1972.

Maynard, P. Assessing Vocational Maturity in Inner City Youth. Doctoral Dissertation. State University of New York, Buffalo, New York, 1970.

McCormick, R. The Influence of Dissimilar Group Guidance Activities Upon The Vocational Interest of Eighth Grade Pupils. Doctoral Dissertation. Ohio State University, 1969.

McCrystal, T. J. Comparison of Vocational Maturity Score of Reservation Indians and Crites' Original Iowa Standardization Adolescents in Grades 7 through 12. Unpublished manuscript. University of North Dakota, 1967.

McIntyre, Gene Harper, editor, Oregon's Career Education Story, Governor's Advisory Council for Career Education, Salem, Oregon, December, 1972.

McMinn, James H., The Career Centered Curriculum for the Vocational Complexes in Mississippi, ERIC ED 059 395, July, 1971.

McSherry, J. P., & O'Hara, R. P. The Test of Occupational Knowledge. Harvard University Graduate School of Education, 1966.

Metfessel, Newton S., and Michael, William B., "A Paradigm Involving Multiple Criterion Measures for the Evaluation of the Effectiveness of School Programs", Educational and Psychological Measurement, Part 2. Winter, 1967.

Meyer, Robert S., "Career Education -- More Than a Passing Fad", WEA Journal, September, 1972a.

Meyer, Robert S., "School-Based Career Education, Statement of Definition", prepared for distribution at information sessions of the State Superintendant's Annual Conference for Administrators, Wisconsin Department of Public Instruction, September 20, 1972b.

Meyers, W. P. The Effect of Neighborhood Youth Corps Upon Vocational Development Variables of Rural Southern Appalachian Youth. Doctoral Dissertation. University of Tennessee, 1966.

Miller, Aaron J. Strategies for Implementing Career Education: A School-Based Model, paper presented at the 1972 annual meeting of the AREA, ERIC ED 062-539, April 3, 1972a.

Miller, Aaron J. "The Emerging School-Based Comprehensive Career Education Model". A paper presented at the National Conference on Career Education for Deans of Colleges of Education, Columbus, Ohio, sponsored by the Center for Vocational and Technical Education, The Ohio State University, April 24, 1972b.

Miller, H. J. The Effect of Integration on Rural Indian Pupils. Final report, June, 1968, University of North Dakota, Grant No. OEG-0-8-078397-1881, U.S. Department of Health, Education, and Welfare.

Moulette, John B., "Career Preparation in the Integrated Curriculum of Comprehensive Career Education", Presented to Local Education Agency Personnel at the LEA Curriculum-Career Preparation Workshop, The Center for VTE, Ohio State University, 1972.

NAM, "Elementary and Secondary Education", Public Policy Report, National Association of Manufacturers, Education Department, New York, N.Y., 1971.

Nash, Robert J. and Agne, Russell M., "Career Education: Earning a Living or Living a Life?" Phi Delta Kappan, LIV (February, 1973), 372-377.

National Advisory Council on Vocational Education, Taken from the first National Report of the Council, July 15, 1969.

Nelson, Orville. Taken from speech presented at a 1973 summer workshop on curriculum design and evaluation. Center for VTAE, University of Wisconsin-Stout, Menomonie, Wisconsin, 1973.

Nelson, Orville. Excerpted from mimeographed materials presented at a 1974 summer workshop on evaluation of career education, Center for VTAE, University of Wisconsin-Stout, Menomonie, Wisconsin, 1974.

Norton, J. Current Status of the Measure of Vocational Maturity. Vocational Guidance Quarterly, 1970, 18, 165-170.

Ott, Jack M., "Classification System for Decision Situations: An Aid to Educational Planning and Evaluation", Education Technology Reviews Series No. 11-Evaluation of Education, edited by D. L. Stufflebeam, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973,

Owens, Thomas R., "Suggested Tasks and Roles of Evaluation Specialists in Education", Education Technology Reviews Series No. 11-Evlauation of Education, edited by D. L. Stufflebeam, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Palo Alto Educational Systems, Inc., A First Step Toward Career Education, ERIC ED 060-224, January 31, 1972.

Parsell, Alfred P. Dynamic Evaluation: The Systems Approach to Action-Research. Santa Monica, California: System Development Corporation, 1966.

Peter, Laurence J., and Hull, Raymond, The Peter Principle, New York, W. Morrow, 1969.

Peterson, Marla, et al., The OCCUPAC Project, Final Report, ERIC ED 055 225, June, 1971.

Pierce, William F., "Career Education: What it IS-What is Isn't", School Shop, Volume 32, # 8 (April, 1973), p. 51.

Randall, Robert S. "An Operational Application of the CIPP Model for Evaluation", Educational Technology Reviews Series No. 11-Evaluation of Education, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Richardson, Elliot L., Secretary of U.S. DHEW, Career Education, DHEW Publication No. (OE) 73-00501, U.S. Government Printing Office, Washington, 1972.

Rhodes, James A., Alternative to a Decadent Society, Indianapolis, Howard W. Sams and Co., 1969.

Rollings, J. An Evaluation of the Effects of Exploratory Experience on the Vocational Maturity of Ninth Grade Boys and Girls. Doctoral Dissertation, University of Colorada, 1967.

Schlesser, G. Career Information Test. Colgate University, 1971.

Schnieding, O. A. & Jensen, S. F. American Indian Students: Vocational Development and Vocational Tenacity. Vocational Guidance Quarterly, 1968, 17, 120-123.

Shill, James F. "Educational and Occupational Aspirations, Expectations, and Abilities of Rural Male High School Seniors in Mississippi," Unpublished Doctoral Dissertation at Louisiana State University, Baton Rouge, January, 1968a.

Shill, James F. Educational Aspirations, Expectations, and Abilities of Rural Male High School Seniors in Mississippi. Report 24, Education Series 4, Social Science Research Center, Mississippi State University, May, 1968b.

Shill, James F. Careers of Rural Male High School Seniors in Mississippi: A Study of Occupational Interests, Aspirations, and Expectations. Report 26, Education Series 5, Social Science Research Center, Mississippi State University, October, 1968c.

Shirts, R. G. Career Simulation for Sixth Grade Pupils. Final report, 1966, Department of Education, San Diego County, Vocational and Technical Education Grant # HRD-131-65, Department of Health, Education and Welfare.

Simpson, Elizabeth J. "The Classification of Educational Objectives, Psychomotor Domain", The Illinois Teacher of Home Economics, Volume X, No. 4, Winter, 1966-67.

Slocum, Walter L. and Bowles, Roy T. Educational and Occupational Aspirations and Expectations of High School Juniors and Seniors in the State of Washington. Vocational-Technical Research and Development Project No. 1. Pullman, Washington: Washington State University, 1967.

Starr, Harold, and Dieffenderfer, Richard A. A System for Statewide Evaluation of Vocational Education, Final Report, The Center for Vocational and Technical Education, The Ohio State University, Columbus, Ohio, May, 1972.

Stake, Robert E. "The Countenance of Educational Evaluation", Teachers College Record, Volume 68, 1967.

Stevenson, W. W. Evaluating Career Guidance, Counseling and Placement. Oklahoma State Department of Education, Oklahoma City, December, 1971.

Stufflebeam, Daniel L., et al., Educational Evaluation and Decision Making, Itasca, Illinois, F. E. Peacock Publishers, Inc., 1971.

Stufflebeam, Daniel L. "Toward a Science of Educational Evaluation", Educational Technology Reviews Series, No. 11-Evaluation of Education Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Sturges, J. Assisting Vocational Development Through a Unit In Civics, A Comparison of Two Techniques. Educational Systems Development Corporation, New Orleans, Louisiana, 1969.

Super, D. Career Pattern Study. New York: Teachers College, Columbia University, 1960.

Super, D. et al. Career Development Inventory. New York: Teachers College, Columbia University, 1971.

Swanson, Gordon I. "Career Education", *Career Education: Perspective and Promise*, edited by K. Goldhammer and R. E. Tayler, Columbia, Ohio, Charles E. Merrill Publishing Co., 1972a.

Swanson, Gordon I., *Facts and Fantasies of Career Education*, Presentation to the Vocational Ed. Research - Special Interest Group, AERA Annual Meeting, Chicago, Illinois, ERIC ED 062-539, April 4, 1972b.

Tatsuoka, M. M. and Tiedeman, David V. "Statistics an an Aspect of Scientific Method in Research on Teaching", in Gage, N. L. (ed.) *Handbook of Research on Teaching*, Chicago: Rand McNally, 1964.

Thomas, Hollie B., et al., *Evaluation of an Educational Program for the Rural Disadvantaged*, ED 061 425, July, 1970.

Tuckman, Bruce W., *An Age-Graded Model for Career Development Education*, ERIC ED 060-180, no date listed. (Margules provides comments in the preface of this report).

Turney, Billy and Robb, George. *Research In Education: An Introduction*, Hinsdale, Illinois, The Dryden Press Inc., 1971.

Tyler, Ralph W., editor, *Educational Evaluation: New Roles, New Means*, The Sixty-eighth Yearbook of the National Society for the Study of Education, Part II, Chicago, Illinois, The University of Chicago Press, 1969.

Tyler, Ralph, "Schools Needed for the Seventies", in General Sub-Committee on Education of the Committee on Education and Labor of the House of Representatives, *Needs of Elementary and Secondary Education for the Seventies*. Washington, D.C.: U.S. Government Printing Office, 1970.

Vriend, J. *The Vocational Maturity of Seniors in Two Inner City High Schools*. Doctoral Dissertation. Wayne University, 1968.

Westbrook, B. W. & Clary, J. R. *The Construction and Validation of a Measure of Vocational Maturity*. Center of Occupational Education, North Carolina University, 1967.

Westbrook, B. W. & Cunnignham, J. The Development and Application of Vocational Maturity Measures. *Vocational Guidance Quarterly*, 1970, 18, 171-175.

Westbrook, B. Toward the Validation of the Construction of Vocational Maturity. Technical paper # 6. Center for Occupational Education, North Carolina University, 1971.

Williams, B. F. *The Effect of Church Related Guidance and Counseling Programs Upon 11th Grade Youth.* Doctoral Dissertation. New York University, 1967.

Wilson, P. Career Planning Course with High School Juniors for a Readiness for Career Planning. Doctoral Dissertation. University of Oregon, 1969.

Wilstach, I. M. Vocational Maturity of Mexican-American Youth. Doctoral Dissertation. University of Southern California, 1967.

Wisconsin Department of Public Instruction (DPI), *K-12 Guide for the Integration of Career Development into Local Curriculum*, December, 1971.

Worthen. *Educational Technology Reviews Series, No. 11-Evaluation of Education*, Englewood Cliffs, New Jersey, Educational Technology Publications, January, 1973.

Wysong, Eugene H. "Evaluating Career Development Programs", *K-12 Guide for the Integration of Career Development into Local Curriculum*, Wisconsin Department of Public Instruction, December, 1971.

Zikmund, D. *A Pilot Study to Evaluate the Effect of Mediated Occupational Information on the Aspirations, Understandings, and Attitudes of Eighth Grade Students*. Doctoral Dissertation. University of Nebraska, 1971.